

Volume 2  
Number 3  
August 1989  
£2.95

A Database Publication

# AMIGA

## COMPUTING



**WIN!** 6 hard discs  
worth £3,500



**POT** Exclusive review  
of 3D Pool!

**THIS IS IT!**  
The disc you've all  
been waiting for



A MEGABYTE OF SUPER SOFTWARE

GREAT DEMOS!

- Trained Assassin: Have you the skill to survive the test?
- Raider: Can you defy gravity in your wandering spaceship?

To load: Switch on and insert disc

Full instructions are in the August issue of Amiga Computing

GREAT UTILITIES!

- Model Universe: Create your very own solar system.
- DiskChecker/DiskSalv: No more corrupt disc problems.

To load: Switch on and insert disc

Full instructions are in the August issue of Amiga Computing



EXPERIENCE A LEVEL OF  
**'TRAINED  
ASSASSIN!'**



PLUS



**RAIDER** Feel the thrust:  
Two full levels

# THE AMAZING AMIGA . . .

COMMODORE  
AMIGA 500



Pack Includes:

A500 CPU, Mouse, P.S.U., T.V. Modulator, Very First Tutorial, Workbench 1-3, Basic, Extras and Manuals.

### PLUS POSTRONIX BONUS PACK

**WORTH OVER £250** which includes 10 Blank Disks, Disk Storage Box, 10 Excellent Games, Mouse Mat, Mouse Bracket (Mouse Holder) Deluxe Paint.

**£399.00**

+ £5.00 post and packing

### AMIGA 500 PLUS DISK DRIVE

Instruction Manuals, Extra Disk, Workbench 1-3, The Very First Tutorial, T.V. Modulator, Photon Paint, Mouse **PLUS** additional Amiga Compatible Disk Drive and 10 Blank Disks.

**£449.00**

+ £5.00 post and packing.

MPS 1500C



**MPS 1200P**

### MPS 1200P

The Commodore MPS1200P printer presents the state of the art in dot matrix printers, with all the features of a printer that would cost much more. The MPS1200P is designed to be like three printers in one. It can act just like an Epson FX printer, or with the flip of a switch, it can act just like an IBM Graphics Printer with IBM Group II-I character set (Danish/Norwegian character set) support. It can also print all the characters available with the Amiga in the Amiga configuration. The MPS1200P is capable of all the printing functions you would expect, as well as some additional features you may not expect.

### MPS 1500C COLOUR PRINTER

#### A. TECHNICAL CHARACTERISTICS

PRINTING TECHNIQUE ..... Impact dot matrix (9-needle print head).

DRAFT MODE ..... — matrix: 9 vertical dots x (5 + 4) horizontal dots; — print speed: 120 char/s, at 10/char in TABULATION SPEED ..... 2 char/s

PRINTING DIRECTION ..... bi-directional, with optimised head movement

PRINT PITCHES ..... 10 char/in to 24/char/in programmable from line, and in SET-UP mode

LINE FEED ..... — 1/6in (4.23 mm), 1/8 (3.17 mm) and 7/72 in (2.4 mm); — n/216 in and n/72 in.

CHARACTER SET ..... ASCII characters and special characters.

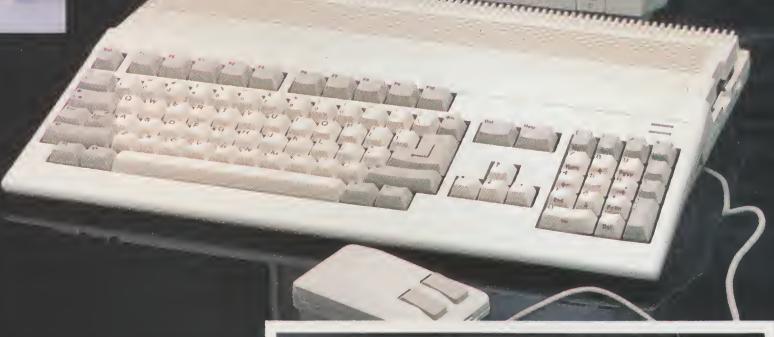
MAX. PRINT LINE LENGTH ..... 40 top 192 characters, according to print pitch selected.

**£229.99**

+ £5.00 post and packing

**£199.99**

+ £5.00 post and packing



### AMIGA 500 + 1084S STEREO/COLOUR MONITOR

(including the Amiga 500 deal)

**£649.00**

+ £10.00 post and packing



**1084 HIGH RESOLUTION COLOUR MONITOR**

### 1084S STEREO/COLOUR MONITOR

**£259.00**

Compatible with PC, Amiga, C64c, C128

+ £5.00 post and packing

**AMIGA 1010 DISK DRIVE**



FREE DISKS

### AMIGA 1010 DISK DRIVE

Amiga 3.5" external drive. Capacity 880K

**£149.99**

+ £5.00 post and packing

### A501 RAM PACK

**£149.99**

+ £5.00 post and packing

# ... AND MORE BESIDES!



## 1541 DISK DRIVE PACK

### THIS TOPICAL GAMES COMPENDIUM OFFERS A TRUE SPORTING CHALLENGE

Pack contains: C64c Computer 1530 Datasette, Quickshot Joystick, Matchpoint (Tennis), Snooker, World Championship Boxing, Daley Thompson's Superfest, Hypersports, Basketball, Matchday II, Daley Thompson's Decathlon, Basket Master, Track and Field.

**PLUS POSTRONIX BONUS PACK  
OF £100 OF FREE SOFTWARE**

**£149.99**

+ £5.00 post and packing

## 1541 II DISK DRIVE PACK

Pack includes:  
1541 II Disk Drive, 10 Excellent Disk Games, 20 Blank Disks, 5½" Diskette Storage Box, AND GEOS!

**£169.99**

+ £5.00 post and packing

## ICONROLLER

### ICONROLLER

Iconroller is semi permanently mounted on your computer console. Iconroller leaves hands on the keyboard while executing Icon commands with your fingertips.

**£15.99**

## COMMODORE FAMILY ENTERTAINMENT



### A GREAT DOUBLE THEME PACK OFFERING THE BEST OF HOLLYWOOD, PLUS A COMPENDIUM OF T.V. GAME SHOWS

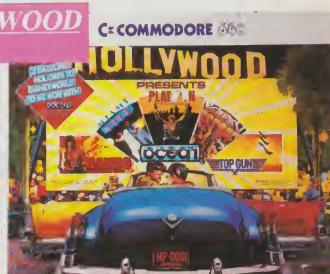
Pack includes: C64c 1530 Data Cassette, Quickshot II Joystick, The Great Escape, Miami Vice, Platoon, Rambo, Top Gun, Every Second Counts, Blockbusters, Bullseye, Trivial Pursuit, Krypton Factor.

**Plus: POSTRONIX BONUS PACK  
OF £100 OF FREE SOFTWARE**

**ONLY £149.99**

+ £5.00 post and packing

## THE HOLLYWOOD PACK



## SEIKOSHA PRINTER

### SEIKOSHA PRINTER

Compatible with most makes of Commodore computers. Features variety of fonts including graphics and near letter quality, reverse printing, italics, tractor feed and paper separator. Comes complete with serial cable.



**£159.00**

+ £5.00 post and packing

## COMMODORE ADD-ONS

### A 1750 RAM EXPANSION MODULE FOR CBM 128

Simply plug it into the expansion port on your CBM 128 and 512K Bytes of additional Ram are available.

### B 1351 COMMODORE MOUSE

The Commodore 1351 Mouse is controller designed for use with the CBM 64/128.

### C 1764 RAM EXPANSION MODULE FOR COMMODORE 64

How do you get a total of 320K Ram on your 64, just plug in the 1764 Module.

**A £149.99 B £19.99 C £99.99**

All prices + £5.00 post and packing.

## CHEETAH 125+

Compatible with Spectrum, Commodore, Atari 2600 Video System, Atari, Amstrad PC, Amstrad.

**£8.95**

## TAC 5 CONTROLLER JOYSTICK

Compatible with Atari, Commodore.

**£13.99**

## SLIK STIK JOYSTICK CONTROLLER

## SLIK STIK JOYSTICK CONTROLLER

Compatible with Atari Computers, Atari Games System, Commodore.

**£6.99**

## COMPETITION PRO 5000

Compatible with Commodore 64 and Vic 20, Sinclair ZX Spectrum (interface required).

**£14.95**

## TAC 2 CONTROLLER JOYSTICK

Compatible with Commodore 64 and Vic 20, Atari Computers, Atari Game Systems.



**£10.99**

## RAM DELTA DELUXE MICROSWITCH JOYSTICK

Compatible with Atari computers and Video Games Machines, Amstrad PCW (with adaptor), Spectrum (with adaptor), Commodore.

**£9.99**

## MICRO HANDLER MULTI FUNCTION JOYSTICK

Compatible with Commodore, Commodore C16/4 (adaptor required), Atari.

**£24.95**



## ONLY AVAILABLE FROM POSTRONIX LTD

A whole new range of innovative computer covers, made from durable clear plastic. Designed to fit your computer perfectly ... not only safe from dust but also all forms of accidental damage.

<b>C64 OLD STYLE</b>	<b>£6.99</b>
<b>C64C NEW STYLE</b>	<b>£7.99</b>
<b>AMIGA 500</b>	<b>£9.99</b>
<b>ATARI 520ST</b>	<b>£9.99</b>
<b>ATARI 1040ST</b>	<b>£9.99</b>

LARGE STOCKS OF SOFTWARE & ACCESSORIES FOR ALL 16 BIT, 8 BIT COMPUTERS - ALSO ALL MAJOR GAME CONSOLES - PHONE (0604) 791771 NOW WITH YOUR REQUIREMENTS.

postronix		INITIALS		SURNAME		ADDRESS				TITLE/TICK		CREDIT CARD		POST CODE		OR PHONE 0604 791771 24 HOUR ORDER SERVICE		
										MR MRS MISS								
SEND YOUR ORDER TO:																		
POSTRONIX AGILE ENTERPRISE CENTRE FREEHOLD STREET NORTHAMPTON NN2 6EW																		
CUSTOME NO (IF KNOWN)																		
CATALOGUE ITEM NO.		DESCRIPTION														ITEM PRICE	QTY	TOTAL PRICE
ACDBNOV																		
MASTER/MASTERCARD/VISA																		
IF YOU REQUIRE A FREE CATALOGUE PLEASE TICK																		
PLEASE DEBIT MY CREDIT CARD																		
SIGNATURE																		
DATE																		
OR ENCLOSURE CHEQUE/ POSTAL ORDER FOR £ CHEQUE PAYABLE TO POSTRONIX																		
SEE NOTE																		
TOTAL GOODS POSTAGE & PACKING																		
GRAND TOTAL																		

OFFER APPLIES TO U.K. ONLY. OVERSEAS ORDERS CHARGED AT OVERSEAS RATE.

*Managing Editor*  
Derek Meakin

*Editor*  
Simon Rockman

*Assistant Editor*  
Jeff Walker

*Production Editor*  
Peter Glover

*Art Editors*  
Mark Nolan  
Doug Steele

*News Editor*  
Don Lewis

*Advertisement Manager*  
John Snowden

*Advertising Sales*  
Wendy Colburn

**Editorial:** 0277 234434  
**Administration:** 0625 878888  
**Advertising:** 0625 878888  
**Subscriptions:** 051-357 2961  
**Telecom Gold:** 72:MAG001  
**Telex:** 9312188888 DB  
**Fax:** 0625 879966  
**Prestel Mailbox:** 61456833

**Published by:**  
Database Publications Ltd,  
Europa House, Adlington Park,  
Adlington, Macclesfield SK10 4NP.

ISSN 0952-5948

Amiga Computing welcomes articles for publication. Material should be typed or computer-printed, and preferably double-spaced. Program listings should be accompanied by disc. Please enclose a stamped, self-addressed envelope, otherwise the return of material cannot be guaranteed. Contributions can only be accepted for publication by Database Publications Ltd on an all-rights basis.

© 1989 Database Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements.

Amiga Computing is an independent publication and Commodore Business Machines (U.K.) Ltd is not responsible for any of the articles in this issue or for any of the opinions expressed.

News trade distribution: Europress Sales and Distribution Limited, Unit 1, Burgess Road, Ivyhouse Lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

## AMIGA SCENE

### 8 LATEST NEWS

Hot news from the US on Kickstart version 1.4, the Amiga 3000 and new add-ons. Plessey to build a mini-Amiga. Plus full show report.

## AMIGA ARCADE

### 14 FUTURE FORECASTS

The latest gossip from the top software houses. Jeff Walker gets the inside info from Coktel Vision, Hewson, Mirrorsoft and friends.

## AMIGADOS

### 35 UNDER THE WORKBENCH

Setting up a hard drive need not be complicated. David Foster turns Prep, high cyl and partition from jargon to understandable English.

## COVER DISC

### 48 CRAMMED INTO A MEGABYTE

Details of the two playable demos squeezed onto the best cover disc you have ever seen. Plus how to use the great PD utilities which will save you from disc disaster blues. Instructions on how you can earn up to £1,000 by contributing with the first ever all Amiga give-away. Don't just dream load up the disc and give it some stick.



## BUSINESS

### 45 PROJECT PLANNER

Knowing who is free to work on a project makes planning very much easier. Now there is a program which should automate the process.

## PUBLIC DOMAIN

### 53 FAT ANGUS'S SWEET PD

What does Fred Fish look like? Who supplies the best PD programs? Where can you get a free club plug? Why, follow Fat Angus and find out.



**HARDWARE****57 SPEED UP BOARD**

The animate-turbo board uses the advanced 68020 processor, so how come it can make your Amiga run slower? John Kennedy explains.

**NAFFWARE****61 WORD PROCESSING DISASTER**

The golden turkey of the month. Software which is so bad it is funny. DJ Walker-Morgan is the unlucky naftware reviewer who gives it 7%.

**HARDWARE****64 IDEAL 40 MEG HARD DRIVE**

Super quick, it auto-boots under Kickstart 1.2 and stores twice as much as the Commodore unit. No wonder Jeff Walker bought his.

**COMPETITION****69 WIN SIX HARD DRIVES**

Ideal Hardware are really nice people, so nice they have given us six 40 meg hard discs to give to you. Prizes worth well over £3,000.

**ART****70 PRODRAW NEEDS PATIENCE**

If you are not happy with the hard copy from your art program then some software from Gold Disk will cure the low resolution blues.

**FEATURE****77 SPOTTING THE VIRUS**

How do you know if you've got one? Can they survive switching off? If you want to prevent an infected boot block check the guide to safe saving.

**AMIGABASIC****79 THE MODEL UNIVERSE**

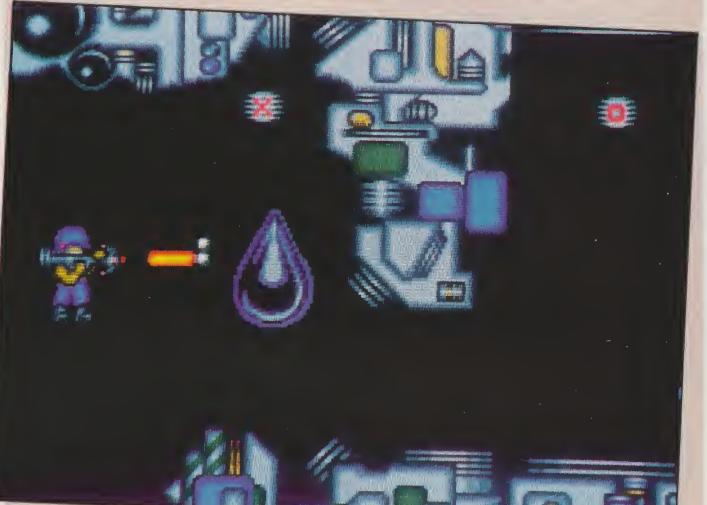
It has taken Pioneer 10 over 17 years to explore the solar system. You and your Amiga can do it in an evening with Alastair Scott's help.

**HINTS****86 GAME KILLER**

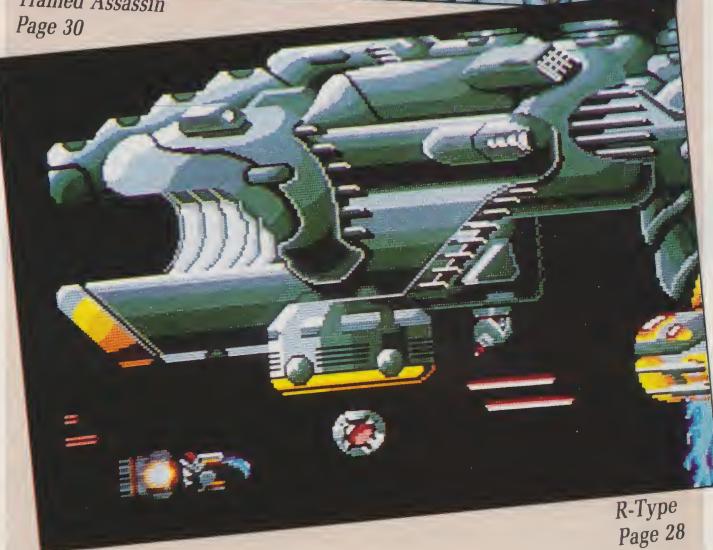
Suffering from joystick jitters? Do you spend more time looking at the loading screen than zapping the sprites? Dr Tennant has the cure.

**LETTERS****91 YOUR RIGHT TO WRITE**

Re-inventing shareware, your views on games and some regular help for curing problems if you have one of the 1,041,000 Amigas in the world.

**GAMES REVIEWS**

*Trained Assassin*  
Page 30



*R-Type*  
Page 28

*Plus*

- Trained Assassin – why it was chosen for the disc.
- Joe Barbara plays 3D pool – join the cue to play.
- Welcome to the Powerdrome. Top speed racing action.
- R-Type may not be the best but sets the standard.
- On the Rampage with a monster hit from Activision.
- Infocom cracks the graphics barrier with Zork Zero.
- Squared-eyed Ocean runs the Gauntlet, a TV terror.
- Take Elite, remove the good bits and call it STAG
- Balance of Power. Would Bush press the red button?
- Ferrari F40s add 200mph glamour to Crazy Cars II.
- Vindicators ST authentically reproduced by Domark.
- Take a walk on the Dark Side. More Freescape 3D fun.
- Demonware puts some evil colours behind centipede.
- Tom and Jerry may be cute but they fail at gameplay.

# COMPUTER SHOPPER SHOW' 89



NOVEMBER 24 - 26, ALEXANDRA PALACE

INCORPORATING  
THE WONDERFUL WORLD OF COMMODORE

Enter the brand new Computer Shopper Show – the ultimate venue for a Christmas shopping spree for you, the Commodore Amiga user.

More than 100 of the 250 stands will be selling Amiga products, making it the biggest Commodore event of all time – and Commodore themselves will also have a feature stand.

For three days in November, Computer Shopper will transform London's Alexandra Palace into the world's largest computer hypermarket.

The choice of Amiga products will never have been greater – nor will the number of special offers.

Order your tickets for the Computer Shopper Show today by returning the coupon alongside with your payment or telephone 051-357 2961 for credit card bookings.

**The Great Hall,  
Alexandra Palace,  
Wood Green, London N22**

10am - 6pm Friday, November 24  
10am - 6pm Saturday, November 25  
10am - 4pm Sunday, November 26

**Sponsored by  
Computer  
Shopper**

**Organised by  
DATA BASE  
EXHIBITIONS**

*Please supply:*

- Adult tickets at £3 (save £1).....£.....  
 Under 16s tickets at £2 (save £1).....£.....  
 Family tickets at £9 (save £5) .....£.....

Total £.....

- Cheque payable to Database Exhibitions  
 Please debit my Access/Visa card no.

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Expiry date: \_\_\_\_\_ / \_\_\_\_\_ Admission at door: £4 (adults)  
£3 (under 16s)

Advance ticket orders  
must be received by  
Wednesday, November 15

Name.....  
Address.....  
.....  
Postcode ..... Signed .....

PHONE ORDERS: RING Show Hotline: 051-357 2961  
PRESTEL ORDERS: KEY \*89, THEN 614568383  
MICROLINK: 72:MAG001

Please quote credit  
card number and  
full address

POST TO: Computer Shopper Show Tickets, Database Exhibitions,  
PO Box 2, Ellesmere Port, South Wirral L65 3EA.

# AMIGA SCENE

## New hardware on way

THE Amiga 3000 is shaping up to be an amazing workstation. Based on the fast 68030 processor, it will still be Amiga-compatible but unlike the A2500 it will not have a 68000.

This means any program which does not run on a 68020/68030 machine – something which uses self-modifying code – will not work on an Amiga 3000.

The machine is in the early stages of development, so ideas such as individual serial numbers in each machine now being discussed may not make it to the final release.

A stepping stone between the A2500 and A3000 will be the A2630. This is the Commodore 68030 card which runs about 10 times faster than a standard Amiga.

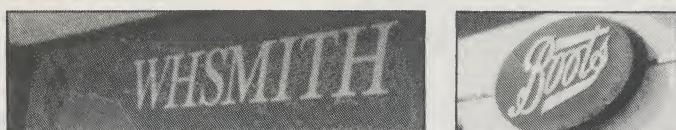
Based on the A2620 card it will take up to 4 meg of ram with more on an additional daughter board. Its designer, Dave Haynie, says it is a far more advanced system than other '030 cards which use the high level of compatibility between the '020 and '030 but fail to take advantage of the bigger chip.

The A590 is a better hard drive than the A2090 so the A2090 is being upgraded with the 2091 which has the high quality DMA/SCSI interface and can take 2 meg of ram.

Only one new product looks for the A500, and that needs other computers. The A560 and A2060 are network cards which allow Amigas to be linked, not just to each other, but to PCs, Macs and other ARCNET systems.

## Distributor closes down

SOFTWARE distributor Brown Wagh Direct of 2 Hazlitt Mews, Hazlitt Road, London has ceased trading. *Amiga Computing* has been asked to advise readers that no further orders are being fulfilled.



## Stores go for games

AMIGA games players can now reap the benefits of a High Street vote of confidence in 16 bit leisure software. W.H.Smith has trebled its commitment to Amiga games and Boots is to double stocks.

"Selling software is what we do well, and the 16 bit market is the way things are going", said computer buyer for Smiths Sean Willis. "We are intending to put 16 bit into a lot of the smaller stores that do not stock it at the moment".

As a result of the recent decision, the number of Smiths outlets with Amiga games has risen from 43 to

118. Over at Boots, software buyer Rose Graham told *Amiga Computing* that its decision will not only increase the variety of Amiga titles in its main store but will also boost the number of stockists.

At present 240 Boots stores take software but the emphasis is on 8 bit. Only 70 take 16 bit and this will rocket to more than 120.

"It is just a matter of timing", said the spokeswoman. "Boots decided that having stocked 16 bit for some time, now was the time to increase this. We have got to keep up with market changes".

## Don't believe all you read..

WHEN you don't have anything to boast about – shut up. Unless you are desperate, then shout so loud about something which is mundane that people will believe you have something special.

So if you come across an exclusive review of Commodore's super new A2500 read it very carefully. You will find that the machine is an A2000 with Commodore's A2620 processor card, a machine *Amiga Computing* reviewed last March.

And if you see a review of Kickstart 1.4 don't believe it, the software isn't finished. *Amiga Computing* had the first full report in April. Now we can spill the beans on some of the newest features.

Kickstart 1.4 is a very different beast to 1.3. While the changes between 1.2 and 1.3 meant that some badly written programs still worked by dint of good fortune, with 1.4 they will go belly-up.

The differences are

worthwhile. For a start it looks a lot better with improved designs of icons and drawers. Workbench and CLI are better integrated which will hopefully help to de-mystify CLI for new users.

The Arexx programming language, included as standard, allows multi-tasking programs to be linked. So from inside your word processor you can send a file to the DTP program which will then spool a file to disc.

It's the kind of command language invented for big systems which are only useful on micros as powerful as the Amiga.

While some of the improvements are useful, one is essential. This is support for the Enhanced Chip Set. With ECS fitted, an Amiga can use 1 meg of chip ram and display a flicker-free 640 x 512 image although this will need an

**Turn to Page 8 ▶**

## Pointers to the greys

WARNINGS have gone out from Commodore that people buying grey imports of its Amiga 500 could find themselves out on a limb.

Aware that machines are being imported from Holland and sold cheap, Commodore is taking action against dealers found to be stocking the rogue machines. It will also refuse to carry out warranty work.

A spokesman for CBM's technical support department told *Amiga Computing* there are a number of ways to recognise such imports.

All A500s from the UK have bar codes both on the machine and on the packaging if they have come from Commodore in the last 18 months. The power supply on machines from Holland may be 220V rather than 240V.

Unless documents are being translated or forged, the machines could have a Dutch manual and would not have the 12 month UK warranty which goes with all Commodore machines.

"If users ring up with technical questions, they will still be helped because it is very difficult to link them to the grey imports", said the spokesman. "Because of the absence of the UK warranty, no support will be given on that. Commodore is aware that there is a problem and is doing everything possible to stamp it out".

## No go area

SOFTWARE cassettes and discs will soon bear an anti-piracy logo which is the latest move by FAST, the Federation Against Software Theft.

Being designed by software house Psygnosis, it is likely to be based on the well-known red circle and diagonal line symbol for prohibition.

It is hoped that when the logo is finished, publishers will be persuaded to use it on their software as a warning against copying.

## Amiga 2000 smooths those cartoon capers

WHEN your favourite cartoon character chases his adversary round the screen, it's quite likely that his movements have been coordinated by an Amiga 2000.

A system based around the Amiga 2000 is now speeding up the production of cartoons, making life easier for the animators and improving end results.

Called the Chromocolour Line Tester, it has been developed by Chromocolour Animation Supplies and Equipment (01-636 2103) which provided all the animation kit used in Who Framed Roger Rabbit.

Rolf Harris built his recent Cartoon Club television programme around it and plans to use it for another series, Steven Spielberg is using it for his sequel to An American Tale, a host of top film companies have bought it and even the giant Disney

corporation is poised for a massive order.

It has also been found that teaching animation to children with the line tester can prompt computer literacy and improve other aspects of education, particularly for those with learning difficulties. This has been proved by Stan Hayward, creator of Henry's Cat, who has used it in a Kilburn school with dramatic results.

The line tester teams up a video camera, digitiser and the Amiga 2000 to shoot animation sequences and play them quickly so timing can be adjusted and movements plotted before acetates are painted.

At present the top professional system costs £10,000 but there are plans to develop a £2,000 version for education and to make a system based on the Amiga 500 for the domestic market.



Amiga animation set-up



Communications partners David Bromley, sales director, and David Underwood, Istel Inet managing director, with Derek Meakin, chairman of MicroLink.

MAJOR changes are being planned for MicroLink, the rapidly-growing electronic mail service. It will leave Telecom Gold and enter into a partnership with a new telecommunications giant, Istel Inet.

Istel Inet is a partnership of two major international names in the field of data communications, Istel and Bell Canada Enterprises.

"We have long been faced with restrictions that have prevented us developing the service in the way we know our subscribers would like", said MicroLink chairman Derek Meakin. "We feel that the time has come to break away from Telecom Gold

## New role for MicroLink

and open new doors.

"The result will be a considerable expansion of services available to anyone with a computer, a modem and a telephone".

Many of the present facilities offered by MicroLink will be improved and the new service will also include news, sport and weather, a comprehensive financial section, plus on-line shopping.

Computer conferencing – a service long requested by MicroLink subscribers – will also be introduced.

## Waiting for Kickstart 1.4

expensive multi-sync monitor.

The Fat Agnus chip, which gives more elbow room to chip ram, is currently being fitted to new A2000s. A batch of 500s went on sale in Germany with 1 meg chips but that was a mistake at the factory.

The Fast File System, which has won friends in the hard drive-owning community has now come to floppies.

It will speed up disc access 2 to 2.5 times. Old format discs can still be read, writ-

ten and created, but this is the area in which Amiga Computing suspects most things will fail to work.

Intuition now features auto-scrolling, custom gadgets and new string gadgets, which will lead to better requesters and a special kind of window which is character mapped. Currently all text on an Amiga screen is plotted a pixel at a time. The new mode plots whole characters at a time, which should be very much faster.

Major changes have taken place with Preferences. At the moment the Preferences program writes out a file

**P**LESSEY is making Amigas smaller. The aerospace company is working on the next generation of in-flight entertainment. Instead of trying to watch a film with all the rude bits taken out over seat backs in the half-dark and wishing the chap in 27D would shut his blind, you can play with an Amiga.

The system will build an Amiga into every seat with a small LCD screen set into the back of the seat in front. The passenger will be able to watch the film on this screen or play games. All the

**A** DEAL now set to top the £1 million mark has been signed between HB Marketing (089-544 4433) and audio visual firm OEC under which HB is supplying genlocks and other Amiga peripherals for use with OEC's audio visual presenter Teleslide. It is also to give advisory support on use of the Amiga, which controls this latest product.

"The initial agreement was worth over £500,000 but since then it has risen closer to £1 million", said Julian Swallow of HB. "It is an ongoing relationship which will bring us even more business and obviously we are over the moon. We have had two and a half years experience in both hardware and software for the Amiga."

called System-configuration. With 1.4 the file will not only be written by Preferences but will be expandable from other programs.

The changes involved with Kickstart 1.4 are so major that the release must be a long way away.

Workbench 1.3 took more than a year to be released from the first announcements. You can get a pre-release version of 1.4 if you buy the £1,700 Moniterm big screen, but for ordinary users not only is it not finished it is probably too buggy to be worth rushing into.

## Airborne gameplay

Amigas will be networked so passengers can order duty free goods, reserve hotel rooms and through a link to the planes flight computer see where they are.

To produce this system Plessey is doing a lot of development work on the Amiga, some of which may filter down to the ordinary Amiga user. We want to play a multi-user flight sim against 200 other passengers.

## Business is booming

and this is now paying off".

HB is shortly to extend its range of Amiga-related products with the Amiga Virus Protection Toolbox developed by Abacus in America.

"The package contains a book and software", said Jim Oldfield of Abacus. "The book describes the phenomenon and the measures you can take to protect your computer system from the harmful effects of a virus and the software hunts down suspicious programs".

With HB awaiting stocks from America, the UK price has not yet been fixed. It sells for \$59.95 in the US.

## ZCL into education

**D**ISTRIBUTOR ZCL (0543 414817) has become one of Commodore's authorised educational distributors to the trade.

David Cheetham, ZCL's national account manager for Commodore products, said: "We are already one of the biggest leisure suppliers in the country and we are on target for the business market having taken on Commodore's PC and Amiga 2000s two months ago. A move into the education market seemed like a natural progression".



Amiga in class at Tivetshall Primary School

## Schoolroom Amigas collect top marks

**N**OW two thirds of the way through its nine month preliminary stage, Commodore's Primary Project is bringing some startling results in schools.

It was launched in January to assess the potential of the Amiga 500/2000 for teaching in primary schools.

The pilot project started with schools in Somerset, Norfolk, Humberside, Berkshire and Cheshire being supplied with Amiga 500s by Commodore. They also received suitable word processing software.

Impact on classrooms has been notable according to the supervisor of the project, Wiesia Okon, of Commodore's education division.

"I have found that children are expressing themselves through the computer on a number of levels, as well as actually doing something such as painting on the Amiga. There is always a lot of talking and discussion going on around the machine", he said.

"The stimulus that the Amiga can give to encourage group work fits in well with the IT philosophy of primary education. The computer enhances and complements

the work already done by teachers and pupils in the classroom".

Surprised by his pupils' reaction to the Amiga was Richard Adams, a teacher at Holway Community Junior School.

"All the children have been extremely enthusiastic", he said. "Children with quite severe learning difficulties are suddenly on an exciting par with their peers. So far the Amiga 500 has brought out qualities in some children that I did not know existed".

The same effects were noticed by Ian Hollingsworth, headmaster of Tivetshall County Primary School in Norfolk.

"I have found the children to be less inhibited than adults in their use of the computer" he said. "The Amiga's mouse has made it very accessible for pupils with the art package Deluxe-Paint II creating a discussion point for lessons".

Findings of the exercise will be used by Commodore to make the Amiga compatible with everyday teaching practices as part of the company's ongoing assault on the education market.

WHEN 16k was a lot of memory, it was the Pet Show. With the popularity of the 64k machine it became the Commodore Show. Perhaps the 13th Commodore Show should have been called the Amiga Show.

Downstairs bore a resemblance to a Far Eastern street market as masses bartered for everything from £1 mouse holders to £650 A2000s. Shows have always been a good place to buy blank discs. At the Novotel 70p each bought good quality double sided discs if you shopped around.

Whatever your interest or budget there was something to be picked up. Power Computing was doing some good deals on its range of hard drives which offer super fast Quantum units as an option.

The 25MHz 68030 cards which should speed up an Amiga tenfold spent the show stuck in customs. Even I dug into my pocket to buy a 1.3 rom.

**C**OMMODORE itself announced an entire new range of merchandise, which in non-salesmanspeak means gifts with the Commodore logo - from a Commodore teddy to key rings and mugs. In true computer company fashion the wallets were not yet available. No doubt they are still writing the manual.

Still, if you really want to snuggle up with a little teddy contact Commodore on 0628 770088. In all other respects the Commodore stand was a disappointment. No machines with the Enhanced Chip Set, no hi-res A2024 monitors (the Commodore version of the Moniterm reviewed last April).

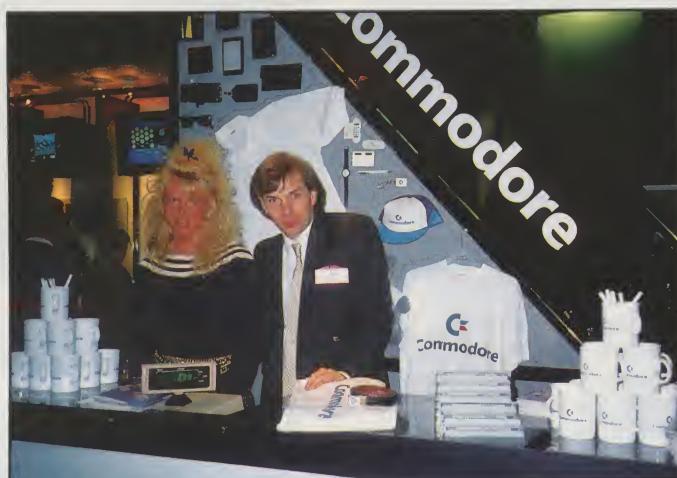
The nearest anything got to being new was the A590, reviewed last month. This succeeded in frustrating me since they are not on sale yet and I want to buy one.

The show saw the public announcement of the *Amiga Computing* cover disc, which led to a rush for subscriptions at the old price. If you filled in a survey form to tell us what you want on the

## Bargain hunters' delight



Simon Rockman reporting



Commodore will sell you something warm to snuggle up to - no, not an A500 power supply



Bargains galore for show visitors

disc, thanks. If not send us a letter - we'd love to know.

Thanks to Fred Fish and some like-minded followers, the Amiga has more, and better organised, public domain software than any other modern computer. A sign of this is the flourishing club run by 17 Bit Software. This was one of the busiest stands as Amigaphiles queued to see what was new and fill gaps in their PD collection.

Two products from ASAP had a low-key launch. The Amidrive was shown, but

having only just gone into production was not for sale. The first shipment had been sent to people with outstanding orders.

Aminet, which is a low-cost network developed for use in schools, was the second ASAP product to make its debut.

Hi Tension is classed by Commodore as a VAR, which stands for Value Added Reseller, and sells Amigas as part of a package by adding its own custom add-ons. Demonstrated at the show was an incredibly

powerful video card capable of animating a 1024 x 1024 pixel display in colour. For more details contact Hi Tension on 0252 344454. If your pocket is not too deep have a look at its 16 colour desktop utility, Icon Paint.

While the Amiga leads the field in many areas it lags behind in one, accounting software. Equinox Business Systems aims to fill this gap with Small Business Accounts, a comprehensive package with balance sheet, profit and loss, budgets, VAT, a full audit trail and quick ways of checking profitability.

There are extra modules for more advanced users and a £30 personal version for controlling day-to-day finances. For more details contact Equinox on 01-729 0990

**T**HE most exciting stand was Amiga Centre Scotland which always has interesting bits and bobs. Among them was a high resolution 24 bit colour graphics card running through the PC Bridgeboard to display Sculpt Animate 4D images. They were of television quality and "only took about 15 hours to render on an '030 machine". Make that over a week (just calculating) on a standard Amiga.

Amiga Centre Scotland also had Digiworks on sale for the first time and a new static ram board which retains its memory even when the Amiga is switched off so you can auto-boot from the ram disc. No price has yet been fixed. *Amiga Computing* will be reviewing it soon.

I was really impressed by Rob Munday's Hologram. Produced at the Royal College of Art where Rob is a lecturer, it gave a 3D view of an image from Sculpt 3D. The first ever home computer-produced hologram, it will be very important as this technique will lead to colour holography. For more details on any of the Amiga Centre Scotland attractions contact 031-557 4242.



Personal callers welcome  
Opposite Fulham Broadway  
Tube Station - District Line

#### AMIGA HARDWARE

#### SKM A500 PACK

- ★ A500 Computer
- ★ TV Modulator
- ★ Photon Paint
- ★ 9 Star Games Plus
- ★ Free Dust Cover
- ★ Free Mouse Mat

All Only  
£399

TV Modulator	£23
Philips 8833 Monitor	£259.95
Commodore 1084S Col. Monitor	£259.95
A501 Ram Expansion/Clock	£129.95
Commodore A1010 3.5" Drive	£89.99
Cumana CAS354 3.5" Drive + PSU	£116.99
Cumana CAX1000S 5.25" Drive	£125.99
Cumana CAS1000S 5.25" Drive + PSU	£134.99

# SK MARKETING

## COMPUTER SUPPLIES

10 Fulham Broadway, London SW6 1AA

COMPARE OUR PRICES BEFORE ORDERING  
FOR UNBEATABLE OFFERS!!  
Export, Government and Educational orders welcome

London's Leading  
**JAMIGA**  
DEALER

All Prices Incl. VAT  
Carriage Free/Mail Order  
Immediate Despatch

PRINTERS	
Micro Peripherals 135+	£149
Star LC10	£192
Star LC10 Colour	£248
Star LC24 10	£332
Star NB24 10	£539
Star NB24 15	£626
Epson LX800	£212
Epson LQ500	£340
Epson LQ850	£510
Epson LQ1050	£656
Epson FX850 (New in)	£379
Epson FX1050 (New in)	£478
Citizen 120D	£156
Panasonic 1081	£167
NEC P2200	£340
NEC P6 Plus	£546
NEC P7 Plus	£679
Amstrad DMP 4000	£305
Epson Laser GQ3500	£1426
Panasonic Laser	£1724
Hewlett Packard Jet 2	£1815
Panasonic 1124 (New 24 Pln)	£305
Panasonic P1180	£190

BOOKS	
Advanced Amiga BASIC	£16.95
Amiga Applications	£16.95
Amiga BASIC Inside & Out	£18.95
Amiga DOS Express & Diskette	£27.45
Amiga DOS Manual	£22.95
Amiga DOS Ref Guide	£14.95
Amiga Gd Graphics Sound Teleco	£17.45
Amiga Handbook	£15.95
Amiga Hardware Ref Manual	£22.95
Amiga Intuition Ref Manual	£22.95
Amiga Machine Lang Guide	£19.95
Amiga Machine Language	£14.95
Amiga Microsoft Basic Prog Gde	£18.45
Amiga Prog Handbook Vol. 2	£23.95
Amiga Prog Handbook Vol. 1	£23.95
Amiga Programmers Guide	£16.95
Amiga Programmers Guide	£18.45
Amiga ROM Kernel Ref Man Exec	£22.95
Amiga ROM Kernel Ref Man Lib	£32.95
Amiga Tricks and Tips	£14.95
Amiga for Beginners	£16.95
Becoming an Amiga Artist	£18.45
Beginners Guide to the Amiga	£16.95
Elementary Amiga Basic	£14.95
Inside Amiga Graphics	£16.95
Inside the Amiga with C 2nd Ed	£20.95
Kickstart Guide to the Amiga	£12.95
Programmers Guide to the Amiga	£23.95
The Amiga	£16.95

## COMMODORE AMIGA 2000

- ★ Latest B2000 Model
- ★ 1084S Colour Stereo Monitor

- ★ 20Mb Hard Disk
- ★ PC-XT Bridgeboard with Floppy

ALL ONLY £1559

#### SKM SPECIALS

Sony 3.5" DS/DD	£23.00
80 Col Space Saving Printer Stand	£28.75
Storage Box (100)	£10.00
Mouse Mat	£5.75
Dust Cover	£6.95
Printer Dust Covers	£5.75
A4 Copy Holder H33	£17.25
4-Way Anti Surge	£17.25

#### LEISURE SOFTWARE

Afterburner	£16.50	Dark Castle	£19.55	Green Beret	£16.95	Mean 18 Golf	£19.95	Rocket Ranger	£18.95	Techno Cop	£15.05
Alien Syndrome	£18.98	Deep Space	£19.95	Growth	£13.95	Menace	£13.95	Rocklords Riot	£13.95	Teenage Queen	£13.95
Alternate Reality	£15.95	Def Con 5	£16.95	Gyroz	£16.95	Mercenary Compendum	£16.95	Roger Rabbit	£19.95	Terrorpods	£18.98
Armageddon Man	£16.95	Defender of the Crown	£18.95	Guild of Thieves	£16.95	Mickey Mousa	£16.50	Rolling Thunder	£18.95	Test Drive	£19.95
Archipelagos	£16.95	Deja Vu	£18.95	Gunship	£19.95	Microprose Soccer	£16.95	Romantic Encounters	£16.50	Tetris	£13.95
Archon II Adept	£16.95	Denarie	£16.50	Hardball	£16.95	Mike the Magic Dragon	£13.95	R-Type	£17.95	Thexder	£17.95
Arena	£23.00	DNA Writer	£14.95	Hawkeye	£13.95	Milennium 2.2	£19.95	Run the Gauntlet	£19.95	Three Stooges	£21.95
Arkanoid	£18.40	Double Dragon	£13.95	Helbent	£13.95	Mindblighter	£16.50	Running Man	£16.95	Thunderblade	£10.95
Army Moves	£16.95	Dragon Ninja	£16.50	Heter Skeler	£13.95	Mini Golf	£19.95	Sargon III Chess	£13.95	Thundercats	£6.95
Around The World in 80 Days	£13.95	Dragons Lair	£29.95	Heroes of the Lance	£19.95	Motor Massacre	£13.95	Savage	£19.95	Tiger Road	£17.95
Atax	£14.95	Dragonscape	£14.95	Highway Hawks	£18.95	Navicom6	£17.95	Scorpio	£16.50	Time & Magik	£13.95
Autoduel	£16.95	Dream Zone	£17.95	Hitchhiker	£19.95	Nebulus	£13.95	Scorpion	£16.95	Time Bandits	£13.95
Baal	£15.95	Driller	£16.95	Hollywood Hijinx	£14.95	A New Beginning	£13.95	Scrabble Deluxe	£13.95	Times of Lore	£15.95
Bad Cat	£18.95	Destroyer	£18.92	Hollywood Poker	£13.95	Nigel Mansell Grand Prix	£16.95	SDI	£19.95	Timescanner	£19.95
Balance of Power	£22.43	Dungeon Master	£15.95	Hostages	£16.50	Nightraider	£14.95	Seven Cities of Gold	£16.95	Tracers	£18.98
Ballraider	£13.95	Dungeon Master Editor	£28.63	Hot Shot	£13.95	No Excuses	£16.95	Strike Force Harrier	£18.98	Trackball Manager	£14.95
Balistik	£16.95	Eagles Nest	£13.95	Hotball	£16.95	Obliteration	£18.02	Shadowgate	£16.50	Triad	£22.95
Barbarian Palace	£13.95	Ebonstar	£18.98	Hot Football	£16.95	4x Off Road Racing	£19.95	Sherlock Riddle	£16.95	Trivial Pursuits	£15.95
Barbarian Psynopsis	£16.95	Echolot	£18.98	Hunt For Red October	£15.95	Offshore Warrior	£16.50	Shogun	£19.95	Turbo Cup	£14.95
Bards Tale	£16.95	Eco	£18.98	Inrids Back	£14.95	Operation Wolf	£16.50	Shoot em up Construction Set	£16.95	TV Sports Football	£19.95
Bards Tale 2	£16.95	Eliminator	£16.95	Insanity Fight	£16.95	Operation Neptune	£18.98	Sid Meier's Sid	£16.95	Ultima 3	£16.95
Batman Caped Crusader	£15.95	Elite	£16.50	Ikarai Warriors	£16.95	Outrun	£19.95	Sid Service	£16.95	Ultima 4	£18.95
Battle Tech	£19.99	Emerald Mines	£13.95	International Karate Plus	£17.95	Overtander	£15.95	Sinbad	£19.95	Universal Military Simulator	£16.95
Battle Chess	£23.00	Empire	£23.00	Impact	£12.02	Pacmania	£15.95	Skateball	£17.95	Uninvited	£18.95
Battlehawks	£23.00	Empire Strikes Back	£13.95	Impossible Mission 2	£17.95	Pac Land	£13.95	Sky Fox	£16.95	Vampire Empire	£13.95
Bermuda Project	£15.95	Enlightenment	£15.95	Indoor Sports	£16.95	Pandora	£13.95	Star Fox 2	£18.95	Vectorball	£13.95
Better Dead Than Alien	£15.95	Espionage	£14.95	Inrids Back	£14.95	Pawn	£15.95	Star Trek	£20.13	Warlocks Quest	£13.95
Beyond Zork	£16.95	Face Off	£19.95	Insanity Fight	£16.95	Police Quest	£19.95	Starfighter	£15.95	Xenon	£16.95
Bio Challenge	£16.95	Falcon	£19.95	Interceptor	£16.95	Populous	£19.95	Star Glider	£15.95	Zak Mc Craken	£20.95
Bionic Commando	£18.95	Fernandes Must Die	£16.50	International Soccer	£14.95	POW	£19.95	Star Glider 2	£16.50	Zany Gob	£19.95
Black Lamp	£13.95	Ferrari Formula 1	£18.95	Iridon	£15.95	Piranha	£13.95	Star Goose	£19.95	Zork 2	£15.95
Blasteroids	£16.95	Feud	£9.95	Jet	£30.48	Pioneer Plague	£16.50	Star Ray	£16.95	Zynaps	£16.95
Blood Money	£19.95	Final Command	£17.95	Jewels of Darkness	£15.95	Plundered Hearts	£20.13	Speed Ball	£16.50	World Class Leaderboard	£17.95
BMX Simulator	£12.02	Fire & Forget	£16.95	Jinxle	£17.95	Police Quest 2	£13.95	Spitting Image	£13.95	World Tour Golf	£17.95
Bomberman	£16.95	Fire Brigade	£23.00	Joan of Arc	£16.95	Populous	£19.95	Starfleet	£22.43	Xenon	£16.95
Breach	£13.95	Firezone	£16.95	Jump Jet	£16.95	Power Struggle	£14.95	Street Fighter	£22.43	Zenon	£16.95
Buggy Boy	£18.98	Fish	£16.50	Karate Kid 2	£18.92	Precious Metal	£19.95	Strip Poker 2	£16.95	Zenon	£16.95
Bulcher Hill	£14.95	Flight Simulator 2	£36.80	Kennedy Approach	£15.95	President Is Missing	£16.50	Star Wars	£13.95	Zork 2	£15.95
California Games	£16.95	Flintstones	£14.95	King of Chicago	£19.95	Prison	£16.95	Steve Davis Snooker	£13.95	Zynaps	£16.95
Capone	£19.95	Football Director 2	£16.95	King Quest 3 Pack	£19.95	Purple Satin Day	£16.50	Sir Crazy	£16.95	World Class Leaderboard	£17.95
Captain Blood	£16.95	Football Manager 2 Expansion	£10.35	Knight Orc	£15.95	O Ball	£13.95	Street Fighter	£22.43	World Tour Golf	£17.95
Captain Fizz	£12.95	Football Manager 2	£14.95	Lancelot	£13.95	Quadrilateral	£16.50	Strip Poker 2	£16.95	Xenon	£16.95
Carrier Command	£16.50	Foundations Waiste	£16.95	Leerieh	£13.95	Quasimodo	£17.95	Zak Mc Craken	£20.95	Zenon	£16.95
Championship Golf	£29.95	Fright Night	£13.95	Larieh & The Ardies	£14.95	Quest of Sport	£17.95	Zany Gob	£19.95	Zork 2	£15.95
Chessmaster 2000	£19.95	Galactic Conqueror	£15.95	Last Duel	£13.95	Quizan	£24.73	Sword of Sodan	£18.95	Zynaps	£16.95
Chrono Quest	£10.95	Galdragons Domain	£17.95	Leathernecks	£13.95	Rambo 3	£15.95	Techno Cop	£15.05	World Class Leaderboard	£17.95
Circus Games	£16.95	Garfield	£18.40	Legends of the Sound	£16.95	Reach for the Stars	£18.95	Teenage Queen	£13.95	World Tour Golf	£17.95
Computer Hits	£19.95	Garrison	£18.40	Leisure Suit Larry	£17.95	Realm of Trolls	£16.95	Techno Cop	£15.05	Xenon	£16.95
Corruption	£15.50	Garrison 2	£16.95	Leisure Suit Larry 2	£19.95	Rebel Charge at Chikaramanga	£24.96	Teenage Queen	£13.95	Techno Cop	£15.05
Crack	£13.95	Gauntlet II	£16.95	Leisure Suit Larry 2	£19.95	Return to Atlantis	£20.13	Teenage Queen	£13.95	Teenage Queen	£13.95
Craps Academy	£16.95	Gee Bee Air Rally	£16.95	Leviathan	£14.95	Return of the Jedi	£16.95	Teenage Queen	£13.95	Teenage Queen	£13.95
Crash Garret	£15.95	GFL Championship Football	£19.95	Live & Let Die	£14.95	Ringside	£16.95	Teenage Queen	£13.95	Teenage Queen	£13.95
Crazy Cars	£16.95	Ghosts & Goblins	£16.88	Lombard RAC Rally	£16.50	Rambo 3	£15.95	Teenage Queen	£13.95	Teenage Queen	£13.95
Crazy Cars 2	£16.95	Goldrunner	£16.95	Manhattan Dealers	£16.95	Reach for the Stars	£18.95	Teenage Queen	£13.95	Teenage Queen	£13.95
Custodian	£14.95	Goldrunner 2	£13.95	Manhunter	£19.95	Rebel Charge at Chikaramanga	£24.96	Teenage Queen	£13.95	Teenage Queen	£13.95
Cyberoid	£13.95	Golden Path	£13.95	Manzia Whittakers Xmas Box	£19.95	Return to Atlantis	£20.13	Teenage Queen	£13.95	Teenage Queen	£13.95
Daley Thompson	£16.50	Gold Rush	£19.95	Robocop	£15.95	Return of the Jedi	£16.95	Teenage Queen	£13.95	Teenage Queen	£13.95

ALL PRICES INCLUDE VAT/CARRIAGE FREE

All prices are subject to change without further notice. All goods subject to availability



# DATEL ELECTRONICS



SPECIAL  
VALUE  
PACK

## AMIGA PRO SAMPLER STUDIO + DATEL JAMMER

- A top quality sound sampling system at a realistic price.
- 100% machine code software for realtime functions.
- HiRes sample editing.
- Realtime frequency display.
- Realtime level meters.
- Files saved in IFF format.
- Adjustable manual/automatic record trig level.

**ONLY £69.99 PLEASE STATE A500/1000/2000**

- Variable sample rate & playback speed.
- Separate scroll line waveform windows & zoom function with Edit windows for fine accurate editing.
- 3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.
- Microphone & line input 1/4" Jack & Din connections.
- Software files can be used within other music utilities.

To complement the Sample Studio the Datel Jammer gives you a 5 octave keyboard to play & record your sampled sounds.

### FEATURES:-

- 4 track sequencer up to 9999 events.
- Tempo & Beat controls.
- Mixer Controls on Instruments.
- Load & Save sequence.
- Works on standard IFF file sounds.



### MIDIMASTER



- Full Midi Interface for A500/1000/2000 (please state model).
- Compatible with most leading Midi packages (including D/Music).
- Midi In - Midi Out x3 - Midi Thru.
- Fully Opto isolated.
- No need to pay more - Full Midi standard.

**ONLY £34.99**

**SPECIAL OFFER!!  
BUY THE MIDIMASTER &  
THE MIDI MUSIC  
MANAGER TOGETHER FOR  
ONLY £59.99**

### PRINTER LEADS

- 25 pin 'D' to 36 way Centronics parallel lead. 1.2m length.
- A500 or 1000, please state.

**ONLY £8.99**

### MIDI MUSIC MANAGER

#### A TRULY PROFESSIONAL MIDI PACKAGE AT A REALISTIC PRICE

- Play sampled sounds on Amiga from any Midi track.
- Full dubbing - listen to one track while recording another.
- Works with many Midi interfaces including Datel Midi Master (see Ad)
- 8 realtime Midi tracks for record/playback.
- Adjustable track length - limited only by available memory.
- Works with standard IFF files.

**ONLY £39.99**

### MIDI CABLES

- Top quality.
- 3 metre length.

**ONLY £6.99 PAIR  
UNBEATABLE VALUE**

### DATA ACQUISITION UNIT



### AMIGA DIGITISER

- 256 x 256 display with 16 grey levels.
- Realtime frame grab 1/50th second.
- Takes standard composite Video input from camera or Video recorder.
- Screen update 1 frame per second, single, continuous or buffered display.
- Load, Save facilities including IFF Save.
- Edit picture, cut, copy, paste and undo.
- Special effects, reverse, negative, mirror, compress, etc.
- Increase the width of the display to 320 x 256 automatically or manually.
- Plugs into the parallel port of your Amiga 1000/500/2000.
- Comes complete with its own power pack.

**ONLY £89.99**



### DEEP SCAN BURST NIBBLER

- Copy an entire disk in under 60 seconds.
- Works with one drive up to four.
- Multiple copy option allows you to make many copies from one original.
- Copy 1 or 2 disk sides - up to 80 tracks.
- Full verify option.

- Compatible with A500/1000/2000.
- Easy to use Icon driven programme takes the mystery out of disk backup.
- Special format parameters for non-standard formats.

**ONLY £29.99**

**NOTICE 1988 COPYRIGHT ACT**  
DATEL ELECTRONICS Ltd. neither authorizes nor condones the use of its products to reproduce copyright material. It is illegal to make copies of such material without the expressed consent of the copyright owners or their licensees.

# DATTEL ELECTRONICS

## EXTERNAL 3.5" DISC DRIVE

- Slimline extra low profile unit - only 6" long!
- Top quality drive mechanism.
- Throughport allows daisy-chaining other drives.
- A superbly styled case finished in Amiga colours.
- Fully compatible.
- 1 meg unformatted capacity.
- Good length cable for positioning on your desk etc.

**ONLY £149.99 TWIN DRIVE**

ADD £5 FOR COURIER DELIVERY IF REQUIRED

**NEW LOW  
PRICE ONLY  
£79.99  
SINGLE DRIVE**



### EXTERNAL DRIVE SWITCH

- Switch in/out of external drives.
- Save on memory allocated for drives not currently in use.

- DF1 & DF2 controlled.
- Fits between computer & driver(s).

**ONLY £9.99**



### STEREO BOOSTER SYSTEM

- Boost the output of your Amiga in glorious stereo.
- 30W + 30W power amplifier.
- 5 band graphic equalizer.
- Complete with cables for A500/A1000/A2000 models.
- Slimline colour matched metal case with built-in mains power unit.
- Headphone socket.

**ONLY £59.99**



### MATCHING SPEAKERS

- High quality miniature 3 way speaker units in die-cast aluminium shelf enclosures.
- 30 Watts 8 ohm each.

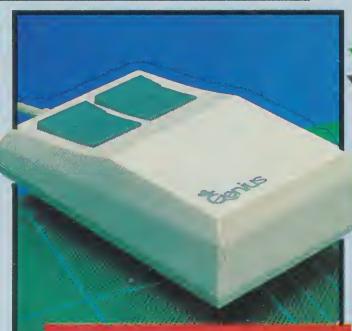
**ONLY £39.99 PAIR**



### LOW COST BAR CODE READER

- Low price Bar Code Reader.
- Model 420, high performance, low cost Bar Code Reader.
- Works with any Amiga/ST computer system (please state which) via the RS232 interface.
- Features a built-in self-testing function.
- Features a diagnostic indicator.
- Can read codes EAN, UPC, Interleaved 2 of 5, Code 39, CODABAR.
- Comes complete with wand, ready to go.
- Easy to install.

**ONLY £189.99**



### REPLACEMENT MOUSE

- High quality direct replacement for mouse on the Amiga.
- Teflon glides for smoother movement.
- Rubber coated ball for minimum slip.
- Optical system counting - 500/mm.

**Special offer - free mouse mat + mouse house (worth £7.99).**

**ONLY £29.99**

COMPLETE

### 512K RAM EXTENSION CARD



- Available with/without calendar/clock option.
- Simply plugs internally into A500 slot.
- Switch in/out with switch supplied.
- Fitted in minutes - no soldering etc.
- Accepts 41256 DRams (zero K fitted).
- With calendar/clock onboard time/date automatically booted.
- Battery backed to retain time/date.

**ONLY £19.99**

FOR STANDARD CARD TO ACCEPT 512K

**ONLY £34.99**

FOR VERSION WITH CLOCK/CALENDAR

NB THESE PRICES ARE FOR BOARDS WITHOUT RAM CHIPS. PHONE 0782 744707 FOR RAM PRICES. PHONE FOR LATEST FULLY POPULATED BOARD/RAM PRICES.



**SPECIAL VALUE PACK**

- An easy to handle Handy Scanner featuring 105 mm scanning width & 200 dpi resolution enables you to reproduce graphics & text on your computer screen.
- Adjustable switches for brightness & contrast.
- A powerful partner for Desk Top Publishing.
- With Geniscan you have the ability to easily scan images, text & graphics into the AMIGA.
- Powerful software allows for cut & paste editing of images etc.
- Save images in suitable format for most leading packages including DELUXE PAINT etc.
- Printout for Epson compatibles.
- Package includes GS4000 scanner, interface & Scan Edit software.
- Unmatched range of edit/capture facilities simply not offered by other scanners at this unbeatable price.

**SPECIAL OFFER**  
COMPLETE WITH DELUXE PAINT II & DELUXE PRINT FOR ONLY £189.99  
INCLUDING HARDWARE/SOFTWARE



ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

## HOW TO ORDER ...

### BY PHONE

0782 744707  
24hr Credit Card Line

### BY POST

Send cheques/POs made payable to "DatTEL Electronics"

### FAX

0782 744292

UK ORDERS POST FREE  
EUROPE ADD £1  
OVERSEAS ADD £3

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS  
AND SUBJECT TO CHANGE WITHOUT NOTICE

CALLERS WELCOME - Please reserve goods by telephone prior to visit.

**DATTEL**  
**ELECTRONICS**

DATTEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE  
GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

SALES ONLY  
0782 744707

TECHNICAL ONLY  
0782 744324



# Amiga Arcade

THIS month sees the release of the third film in the Indiana Jones series, and along with it the Lucasfilm computer game tie-in.

Details are thin on the ground just now – US Gold is keeping quiet until its big release at Stringfellow's, a night club so famous they don't bother putting the address on the invites.

However, it seems Indiana Jones and the Last Crusade will have you scrambling across a rumbling circus train, battling against savage rats, playing a human fly on granite castle walls... all in an attempt to track down the elusive Holy Grail.

Following the all-format arcade game, Lucasfilm will be releasing a 16 bit only adventure based on the same plot. More news next month when we get back from the big event.

*In his spare time Harrison Ford enjoys underground hang gliding and listening to hard rock.*

## Mr Whippy rides again



*Indiana Jones and two YTS workers prepare Stringfellow's for the big launch*

## Courting success

IMAGEWORKS is developing the ultimate tennis sensation, *Passing Shot* – a Sega coin-op licence. The game simulates a grand slam season, with doubles or singles championships taking place

across the globe, covering both clay and grass courts.

Start warming up for *Passing Shot* now, it'll be out in the autumn, just in time for the indoor season.

## Carry on sniggering

*SEX Vixens from Outer Space* was released last year amid a wave of smutty sniggers. It was an adventure with graphics about a colony of beautiful sex-starved female clones from the planet Mondo.

Coming soon from Free Spirit Software of Kutztown, USA, is a sequel, *Planet of Lust*. It will once again star Brad Stallion as captain of the spaceship Big Thruster.

In a tacky plot featuring Dr. Dildo and Princess Orgasma, your mission will be to destroy a force field around the planet Erotica.

"The music and sound effects are quite unique," says programmer Joe Hubbard.

I expect they are. Yawn.

## Time is on their side

OXFORD Digital Enterprises has spent the past year researching techniques for generating highly realistic animation on the Amiga. The upshot is a combination of high frame rates with video-generated images of animation positions.

The first game to use this new technique will be Time, an animated role-playing journey which takes you through the ages.

It starts at some time in the future in the gallery of a satellite orbiting the earth – a futuristic Madame Tussaud's filled with statues of very famous and very dead people.

Your quest in Time will take you back through the ages to meet the folk these waxworks were modelled from, people like Julius Caesar, Merlin and Leonardo Da Vinci.

When finished, Time will feature more than 200 fully animated characters, each of which will be depicted in mid-shot as a 60 pixel high smoothly animated character, or in extreme close-up as a full screen animated face.

There will be 10 major playing areas, which themselves will contain 10 horizontally scrolling scenes. All characters will act independently of the player, transferring objects and shifting alliances as the game progresses.

Techniques borrowed from the cinema – like fast cuts from long-shots to close-ups – promise to bring the game to life like none before.

ODE is developing the flagship version of the game on the Amiga. It will be released in the autumn on the Empire label.

# All the latest news on the games software scene

## Active goes for world domination

SOUTH London public relations company Active Sales & Marketing has added Bethesda Software of Maryland, USA, to its growing list of international clients.

Bethesda's first release with Active is Wayne Gretzky Hockey — a misleading title if you don't know he is an American ice hockey hero.

The game features digitised fights, animated penalty calls and an instant replay feature. You can control any player, coach from the bench or sit back and watch the computer control both teams.

Detailed 3D graphics highlight the intricate stickwork and skating of each player on the ice, while the alternative view from above is the perfect vantage point from which to appreciate the game's offensive and defensive strategies.

Wayne Gretzky Hockey has been voted best sports simulation of the year by the American Software Publishers Association. It's release in the States caused The Washington Post to write: "...it could be the best sports simulation yet".

Out in the UK now, it costs £24.99 and we'll be taking a timeout half way through the third period to give it a full

appraisal next month.

On the continent, Active represents the UK interests of French labels Coktel Vision and Tomahawk, plus the German games house EAS. Until this month EAS had been building itself quite a reputation for excellent graphics and absorbing gameplay. Then it released Stag, which has scored an all-time low of 11 per cent in this month's Arcade.

This will inevitably affect the reception of its next few releases — Roll-Out, Wangler and Black Magic. But Kayden Garth, a D&D type game, should go a long way towards putting EAS back on the map.

Kayden Garth is the name of a prisoner detention planet, only the prisoners have escaped their chains and you've been given the job of putting down the rebellion.

The game contains 30 dungeons to explore and features some marvellous 3D and bird's-eye view graphics. EAS estimates there is 60 hours of playtime in Kayden Garth, which is out now priced £19.95.

Active also does the PR and sales in the UK for the Impressions label, the first release on which, Raider, is featured on our cover disc

this month.

The follow-up to Raider is Chariots of Wrath, a game which has caused the mighty Mirrorsoft to question its ancestry. Apparently the screenshots Active distributed bear a resemblance to MirrorSoft's big summer release, Xenon II.

The screenshots we received were so badly blurred and over exposed that they resembled nothing more than a bad accident.

Chariots of Wrath is being hyped as an arcade epic — "the most amazing shoot-em-up yet for the Amiga" it says here.

Written by the team responsible for Sidewinder II, it features in excess of 300 combinations of weapons and seven totally different game types.

Some of the meanest and ugliest end-of-level aliens yet are promised, all of whom will be trying to prevent you rescuing the inevitable captured princess.

It should be in the shops by the time you read this, priced £24.99. Watch these pages to see if it's all just hype.

*Not even jetsetter Robert Stallibrass, the driving force behind Active Sales, can do anything about a Paris traffic jam*



## REVIEWED

## THIS MONTH

95%	Trained Assassin
91%	Powerdrome
88%	Balance of Power
87%	Zork Zero
86%	R-Type
83%	3D Pool
73%	Evil Garden
68%	Vindicators
67%	Artura
64%	Dark Side
61%	Rampage
51%	Tom and Jerry
47%	Gunship
43%	Crazy Cars II
43%	Run the Gauntlet
11%	S.T.A.G.

## MAX HACKS

- 3D Pool
- Baal
- IK+
- Lords of the Rising Sun
- Scorpion
- Silkworm

## Gallup Chart

Last Month

1	Populous Electronic Arts £24.95	1
2	Lords of the Rising Sun Electronic Arts £24.99	NE
3	MicroProse Soccer MicroProse £24.99	NE
4	Forgotten Worlds US Gold £19.99	NE
5	Gunship MicroProse £29.99	NE
6	Blood Money Psygnosis £24.99	10
7	Kick Off Anco £19.99	NE
8	Silkworm Virgin Games £19.99	NE
9	Falcon MirrorSoft £29.95	3
10	Millennium 2.2 Electric Dreams £29.99	NE

## No more nudes for Tomahawk

**F**RENCH games label Tomahawk has its sights well and truly set on 1992. Not satisfied with being part of one of the top three houses in France, Tomahawk is ready to invade Britain and Europe in a big way.

The label was launched earlier this year as a sister to Coktel Vision, which has already had a taste of the discerning British with the success of Freedom (80%, AmC February 1989) and the failure of 20,000 Leagues under the Sea (15%, AmC March 1989).

You'll remember Tomahawk's first release, Emmanuelle. It sank like a brick, scoring 37% in the June issue. But it served its purpose in getting the Tomahawk brand name known.

Sensational publicity stunt

over and done with, Tomahawk has announced its release schedule for the coming months. And it's looking good.

Already in your shops is African Raiders, a game which the company modestly understates as a "simulation of driving".

It's a whole lot more than that. Have you ever played a driving game and wished you could whizz off in any direction under the sun? Well now you can.

African Raiders is a race from Tunis to Dakar across the burning sands of the western Sahara. There is a track – for those who want to follow it – marked out with oil drums, but it takes a winding course and sticking to it isn't going to get you home first.

The game comes with a



African Raiders, fast action and good gameplay

poster which also serves as an accurate map. Within its limits you can travel in any direction you like. Not just north, south, east and west, but right around the 360 degrees of the compass.

You can even reverse. In fact situations crop up regularly where going backwards is the only way forwards.

Leaping and bounding off the beaten track at more than 200 kph has its hazards. Great herds of camels sleeping behind rocks inhabit some areas. Other districts are littered with bones – last year's models, says Tomahawk.

Quicksand is all over the place. Which is where your selectable two-wheel or four-wheel drive comes in handy. Doesn't help much in the graveyard though, where the rusting wrecks of unsuccessful competitors – bikes, buggies and jeeps – stick up out of the dunes like tombstones and stop you in much the same way as do the camels.

All the hazards are marked clearly on the map. Careful drivers will avoid them. Explorers and burn-it-up merchants will deliberately seek them out.

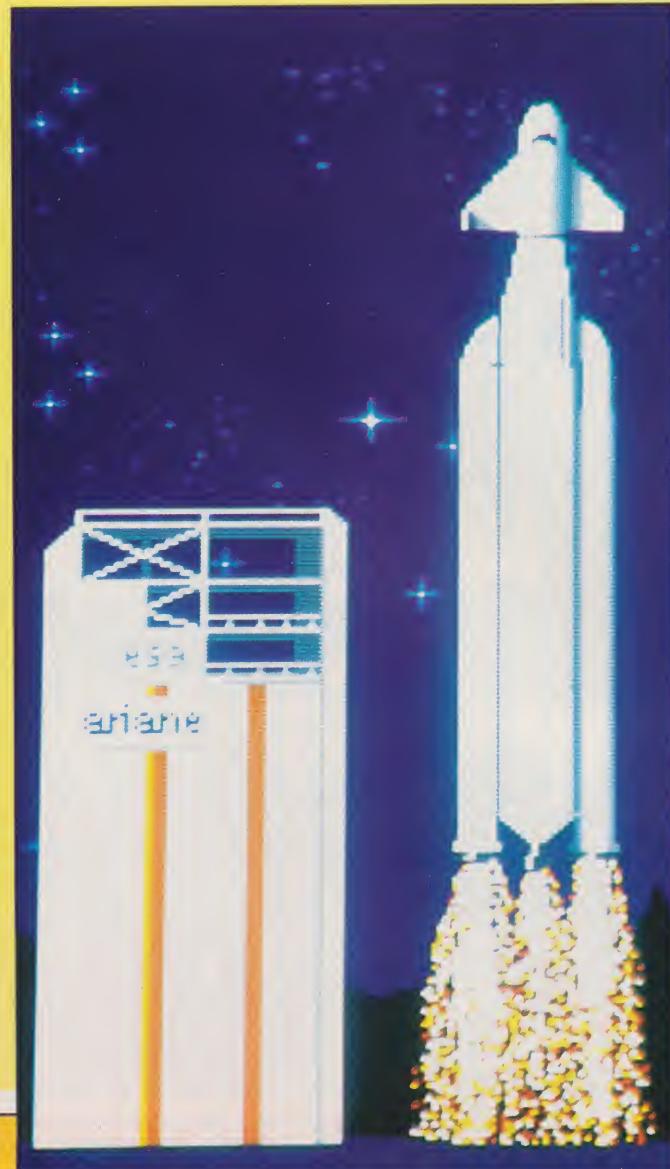


*Tomahawk boss Roland Oskian has a wink and a smile for the hard-to-please British*

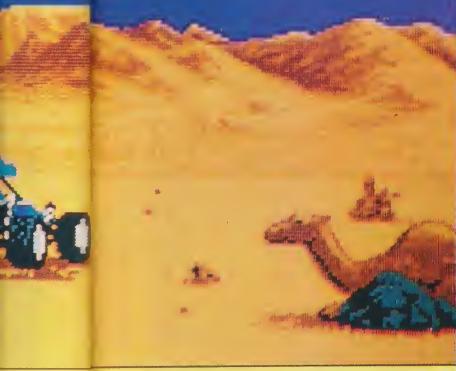
It's fast, it's fun and it's in the shops now priced at £19.99. We'll have a full review next month.

Hot on the heels of African Raiders will be The Legend of Djel, a point-and-click adventure featuring 30 superbly drawn screens. Set in the Middle Ages, you live in one of four imaginary kingdoms, all of which are suffering from different problems due to circumstances under the control of neighbouring lands.

Your mission is to rescue a sorcerer's daughter – represented on-screen by a (non-tacky) rendition of the graphics artist's girlfriend –



*Above: Superb graphics in The Legend of Djel add to the atmosphere  
Left: ESS Hermes blasts into orbit in this early Amiga version screensho*



and collect the bits and pieces which will bring health and prosperity to the four kingdoms once more. Enroute you will have to solve some fiendish puzzles and have the weirdest shoot-out you've ever seen.

The Legend of Djel will come on two, maybe three, discs and will cost £24.99.

Still under construction when we went to France recently to investigate the Tomahawk phenomenon is ESS Hermes. This game will put you in full control of the European space shuttle right down to working out your flight path, and will give you a choice of various missions.

On the flying front you can try landing, atmosphere re-entry or special manoeuvres, after which you can turn your hand to running a satellite park or setting up an orbital space station.

In the re-entry sequence, the only animated part of the game we were able to see – running on a PC of all things – you are presented with a 3D representation of the sky ahead viewed from behind your craft (like Afterburner).

Hard to judge a whole game on one sequence, but it looked good enough to leave us wanting to see more.



sphere  
screenshot

## Horror at Lizard Breath



Cinemaware says it came from the desert, but we have evidence that it came from the Watford Gap

**H**AVING successfully translated gangster movies, comedies, Saturday morning matinees and adventure films into computer games.

Cinemaware has now turned its attention to the tongue-in-cheek horror genre with *It Came From The Desert*.

The game is a tribute to the Big Bug films of the 1950s and is set in the isolated community of Lizard Breath, Arizona. One day a meteor strikes nearby and mysterious events and disappearances start to plague the town.

You are cast as a young scientist determined to get to

the bottom of the affair. In doing so you will risk your life as you face creatures spawned from the supernatural.

Cinemaware claims it is the biggest arcade strategy contest ever created on a personal computer.

Now where have we heard that before?

## Watching the detectives

**I**NLAY cards are usually full of rubbish about how the Qwerties are fighting a terrible space war with the evil Yuiops. Electronic Arts has sent us details of *The Hound of Shadow*, which has a plot that sounds a bit like this.

According to EA it is a role-playing adventure game with an underlying supernatural theme. Using Eldritch Games's special Timeline role-gaming system it shares the feel of the Cthulu Mythos which was developed by the author H. P. Lovecraft.

You create a character based on one of six professors with different options for sex, nationality and proficiency in more than 50 skills. Set in the sepia tone of

the mid '20s, this is an historically accurate detective game.

*The Hound of Shadow* is scheduled for release late September, price £24.99.



Chris Elliott and Dick Edwards of Eldritch Games on the trail of *The Hound of Shadow* (It's behind you.)

## Imageworks does it first

**H**AM is unique to the Amiga – and to think it was nearly taken out of the design because Jay Miner, the chip designer, didn't think it was particularly useful.

Unless you want impressive static screens you might think Jay was right. If you've tried cutting out a brush with

Photon Paint you will know that HAM leads to slow sprites and furry edges.

Imageworks has cracked the problem to produce DDT, named after the CP/M utility Dynamic Debugging Tool. The result is an amazingly colourful game with some incredibly detailed objects.



DDT may only be NTSC, but all 200 lines are HAM – the first game ever to do so

## Hewson backs private enterprise

**C**OMMODORE 64 owners may remember enjoying Battle Valley from Hewson. The programming team, known as Creative Thought, did. In fact they enjoyed the game so much they wrote their own version for the Amiga.

Hewson, being suitably impressed, sorted out some whizzo music and bought the program from them.

The plot is simple; winning is not. The world is almost devoid of missiles and people can live in peace – except that a gang of terrorists has made off with the last two missiles and is threatening to unleash them on world capitals.

The missiles are hidden behind well-defended bases in the desert of Battle Valley and can be captured using a tank. Unfortunately the tank can't cross bridges which have been blown up by the

terrorists.

You need to repair the crossings and take out defences using a helicopter gunship. Once the way is clear



You'll need the resolve of Maggie and the skill of Fatima to kill the snarl of Castle Warriors's big red dragon.

## Parisian poison

**F**Ollowing the success of Bio Challenge, Paris-based Delphine Software's second UK release is to be Castle Warrior, a six level arcade-style action game.

You take the role of Prince Edred the Brave, heir apparent to the throne of Pacifia. Your father, Edelred the Good, has been poisoned by the evil wizard Zandor (the Nothing).

Rather than rushing to the treasury to count all the money you'll be coming into, you decide a better course of action is to go off on a quest to force the anti-

date from the evil wizard.

To reach him and gain the potion you will have to battle through subterranean caverns filled with deadly monsters, spear the massive red dragon Olisos, paddle a canoe along an underground stream dodging rocks and falling stalactites, defeat the huge demon Jibba, and dodge Zandor's spells.

In the final level you will have to dodge more mighty dragons as you fly high above the clouds on your victorious journey home.

Sounds lethal. Out "real soon now" at £24.99.

you can use the tank to mop up the last resistance and capture the base.

At either ends of the beautiful, smooth scrolling land-

scapes are the missile silos. Can you make it that far and save the world? It'll cost you £19.99 to find out. Release date August.



Battle Valley from Hewson features three levels of wonderful parallax scrolling

# FIRST micro

HARDWARE & SOFTWARE  
SPECIALISTS  
6 FOREST CLOSE  
EBBLAKE IND EST.  
VERWOOD, DORSET

PRICES EXC.  
V.A.T.  
FREE  
DELIVERY

EXC. VAT



0202 813176



FREE DELIVERY

## AMIGA A500 + FREE £220 SOFTWARE

INCLUDING:- •PURPLE SATURN • HOSTAGES  
• INTERNATIONAL SOCCER • WINTER OLYMPIAD  
• SPITTING IMAGE • STARGOOSE • BACKLASH  
• QUADRALIEN • ELIMINATOR  
• FANTASTICK F3 JOYSTICK  
• TV MODULATOR

**£339**

## AMIGA A500/ PHILIPS 8833

**£520**

## AMIGA B2000/ PHILIPS 8833

**£1049**

INC ACCESSORIES

### A500 HARDWARE

A500 + TV MOD ..... £305  
A500 + £200 of GAMES ..... £339  
A500 + 1084(S) HIGH  
RES COLOUR MONT ..... £520  
A500 + IBM DRIVE ..... £399

### AMIGA EXTERNAL DRIVES

Cumana Cax 354E ..... £87  
AF880 ..... £78  
RF302C ..... £74  
Supra 20mb H/disk ..... £499  
★ All drives 1mb + on/off switch ★

### AMIGA ACCESSORIES

A501-512k RAM ..... £113  
TV Modulator ..... £22  
Mouse Mat ..... Call  
Amiga dust-cover ..... Call  
3.5 135TPI DS/DD ..... Call

### COMMODORE C64

C64 Hollywood ..... £129  
C64 Entertainment ..... £173  
1541CII 5.25 C64 drive ..... £139  
1581 3.5/800K C64 drive ..... £112  
Oceanic 5.25 C64 drive ..... £109

### A2000 HARDWARE

A2000 + 1mb RAM ..... £869  
A2000 + 1084(s) monitor  
+ bridge BD + 20mb H/disk ... £1390  
A2000 + 1084(s) ..... £1049  
20mb hard disk ..... £269  
XT bridge BD ..... £269

### A500/A2000 MONITORS

1084(s) High res monit ..... £219  
Philips CM8833 High res ..... £199  
1901 C64 - colour ..... Call  
1900 C64 - Mono ..... £119

### PRINTERS

Star LC10 (P) 130CDS ..... £169  
Star LC10 Colour ..... £216  
Star LC24-10 (24 din) ..... £305  
Citizen 120D ..... £105  
Commodore MPS 1230 ..... £119  
Panasonic KXP1124 (24 pin) .. £279  
Panasonic KXP1081 ..... £149  
Epson LX800 ..... £158  
Epson LQ500 ..... £250  
Epson FX850 ..... £409  
Epson FX1050 ..... £382  
Epson EX800 ..... £369  
Epson EX1000 ..... £419

## AMIGA A500

INCLUDING:-  
• MOUSE • WORKBENCH  
• UTILITIES • MANUALS  
• BASIC • TUTORIAL  
• TV MODULATOR

**£305**

## AMIGA B2000/ PHILIPS 8833

INCLUDING:-  
• MOUSE • WORKBENCH  
• BASIC • UTILITIES • MANUALS  
• XT BRIDGE BOARD  
• 20Mb HARD DISK

**£1390**

## AMIGA B2000

INCLUDING:- MOUSE • WORKBENCH  
• BASIC • UTILITIES • MANUALS

**£869**

### COLOUR PRINTERS

Citizen HQP40 ..... £352  
Epson EX1000 ..... £543  
Hewlett Packard Paint Jet .... £689\*  
NEC P6+ ..... £508  
NEC P7+ ..... £624  
Star LC10 ..... £195  
Xerox 4020 ..... £949

### LASERS

Citizen Overture ..... £1199  
HP Laserjet II ..... £1825

### BUSINESS S'WARE

Sale £  
AEGIS Sonix ..... £39  
Animated Images 3D ..... £99  
City Desk ..... £69  
Deluxe Video ..... £49  
Deluxe Music ..... £49  
Deluxe Paint ..... £49  
Digiview Gold ..... £99  
Home Accounts ..... £19  
Mailshot Plus ..... £39  
Maxiplan A500 ..... £69  
Music Studio ..... £23  
Organiser II ..... £49  
Page Setter ..... £89  
Page Flipper Plus ..... £24  
Photon Paint ..... £49  
Photon Video ..... Ring

Professional Page	..... £175
Pro Writer 2	..... Ring
Publisher Plus	..... £69
Sculpt 3-D Animate	..... £102
Sculpt 3-D	..... £63
Superbase II	..... £59
Superbase Personal	..... £44
Superbase Professional	..... £169
TV Show/Text	..... £79
Word Perfect 42	..... £169
'Works'	..... £69
Zumafonts	..... £25

### UK TOP 19 GAMES

No.	Sale £
1 Falcon	..... 19.99
2 Sword of Sudan	..... 19.99
3 Dragon Master	..... 19.99
4 Gales Dragon's Domain	..... 19.99
5 TV Sports Football	..... 19.99
6 Dragons Lair	..... 19.99
7 Victory RD	..... 19.99
8 Int Karate +	..... 19.99
9 Speedball	..... 19.99
10 Who Framed Roger Rabbit	19.99
11 Operation Wolf	..... 19.99
12 Lombard RAC Rally	..... 19.99
13 Elite	..... 19.99
14 Motor Massacre	..... 19.99
15 Mickey Mouse	..... 19.99
16 Captain F122	..... 19.99
17 Purple Saturn Day	..... 19.99
18 Technocop	..... 19.99
19 Rocket Ranger	..... 19.99

**ALL PRICES EXCLUDE VAT**

**CREDIT CARD MAIL ORDER  
AND EXPORT HOTLINE**

**0202 813176**

**OPEN MON-SAT 9am-5.30 pm**

All prices and manufacturer's specifications  
subject to change without notice.

To: First Micro, 6 Forest Close, Ebblake Ind. Estate, Verwood, Dorset

I wish to order \_\_\_\_\_

My computer is \_\_\_\_\_

I enclose cheque/PO for £ \_\_\_\_\_ inc VAT.

Or charge my Access/Visa No. \_\_\_\_\_ Exp. date \_\_\_\_\_

Name \_\_\_\_\_ Signature \_\_\_\_\_

Address \_\_\_\_\_

Postcode \_\_\_\_\_ Tel No. \_\_\_\_\_



# EXCLUSIVE

## 3D POOL

A dip into your pocket

ORLANDO is famed for Frak!, his cutesy Beeb game which was ever so badly ported to the C64 by Statesoft. His is also the name behind a number of quite brilliant Acornsoft titles. Now Orlando has discovered the Amiga, and has ported his 3D Pool game from the Archimedes and ST.

This is a pool game like no other. It aims to simulate the game from the position of a player. The big O says this is the reason you can't see the table from directly overhead.

Even if you stood on the table – before the manager kicked you out – you wouldn't get a proper overhead view. You would see your feet and the light would get in the way.

So what you get is what you see – a player's eye view of the table. Except there is no cue. The white ball is fired along the player's line of sight with top-spin and bottom-spin relying on the viewing angle. Side-spin is selected from an icon at the top of the screen.

Although you move around the table, the lack of a floor sometimes makes it feel as though you are staying still and throwing the table around.

The mouse mechanism takes some getting used to. Since both 3D Pool and Virus started their respective lives on the Archimedes, it might be something to do with Acorn programmers being able to cope with sensitive mice.

Pool is a short game, which makes it more exciting than snooker. Even so, 3D Pool heightens the competition by providing a number of computer-generated opponents who play at different strengths.

You can either practice against an individual or take part in a tournament in which the players are drawn

at random. The final is played against Maltese Joe Barbara.

Once you have proved you are the hottest cueman to have laid hands on a mouse you can have a go at the trick shots. These display numbers for the angles involved and have you trying to puzzle over how to get balls into the right pockets. After you have solved the 19 tricks you can set up your own using an editor.

From the initial title screen – which was digitised using SuperPic right



With pockets this big, who needs a handbag?

here in the Amiga Computing office – to the roar of the crowd as you defeat Mr Joe, 3D Pool is great. It is playable, slick and technically brilliant.

Fully Amigaised to use sampled sound, a 256 line PAL display and blitter routines, the result is better than the ST. But then why else did you buy an Amiga?

Simon Rockman

GIVE an infinite amount of designers an infinite amount of time, coffee and money, and it's easy to make a completely original computer game. If the coffee's a problem you could always set about taking an old idea and "originalising" it.

For example, you could take Centipede and add some of the ideas which made Arkanoid different from Breakout. The resulting game would end up tolerably close to Demonware's Evil Garden.

The box is the first main hazard; not merely is it huge, silver and difficult to open, but it has Beware of Demonware writ large in red all over it. Somehow I think this is meant to be a threat rather than a warning.

The plot: You, a successful mercenary, have the job of clearing a garden planet of mushrooms, alien centipedes and other beasties. Centipedes are relatively innocuous; they are only nasty on contact and the bits you have shot off them become more mushrooms.

The spider usually haunts its web under the score panel, but once in a while it comes out to bounce around and drop mines.

Fleas fall from the top of the screen at an enormous rate. They're very hard to hit and leave a trail of mushrooms behind them. Other beasties appear every so often to say a big Hi



See page 87 for trick shot tips



THERE can be few people who have not heard of Tom and Jerry, the funniest double-act ever, responsible for bringing more gratuitous violence to our screens than Rambo, The Professionals and EastEnders combined.

With the exception of the later cartoons, which at a generous assessment were rubbish, most of their adventures have stood the test of time and still manage to be funny at the fifteenth time of viewing.

So if it works for a cartoon, the same zany formula should work for a computer game. Right? Well it's a good theory.

The game's opening credits are promising, with accurate renditions of both characters, and the Amiga's sound capabilities reproduce Tom's manic laughter perfectly. The action,

# EVIL GARDEN

Can you dig it?

and drop the occasional bomb on you.

This plot will be familiar to both of the Millipede fans, Atari's less successful Centipede sequel. What is new is the pumpkin, which gives bonus weaponry when shot.

The standard issue peashooter-on-a-stick can be upgraded, with a little luck, to a shielded turret with bouncing bullets and an orbiting follower. As in Arkanoid, extra lives and a doorway to the next level can be got by picking up pumpkin remains.

Not surprisingly there is the standard issue mystery prize, which is often a feature which stops you shooting quickly. In the Equally Nice department is the little pill which turns all the mushrooms into centipedes. The screen becomes full of the beasties, all heading your way.

Every so often you get a bonus screen which has a huge Audrey II type plant spitting things at you. Hit it often enough and it's biggus bonus time. Apart from that, there's nothing really new. Nothing new apart from a full PAL screen, chock full of fast moving (small) sprites.

Two, three or four players? No problem. Two players simultaneously? Likewise. All this and meg enhancements too.

A useful few minutes can be spent reading the manual while the game

loads – it takes far longer than you'd expect. In fact, Evil Garden seems to take at least twice as long to load as it did the last time you loaded it. And even when the drive light goes out, it's only pausing between loading sessions.

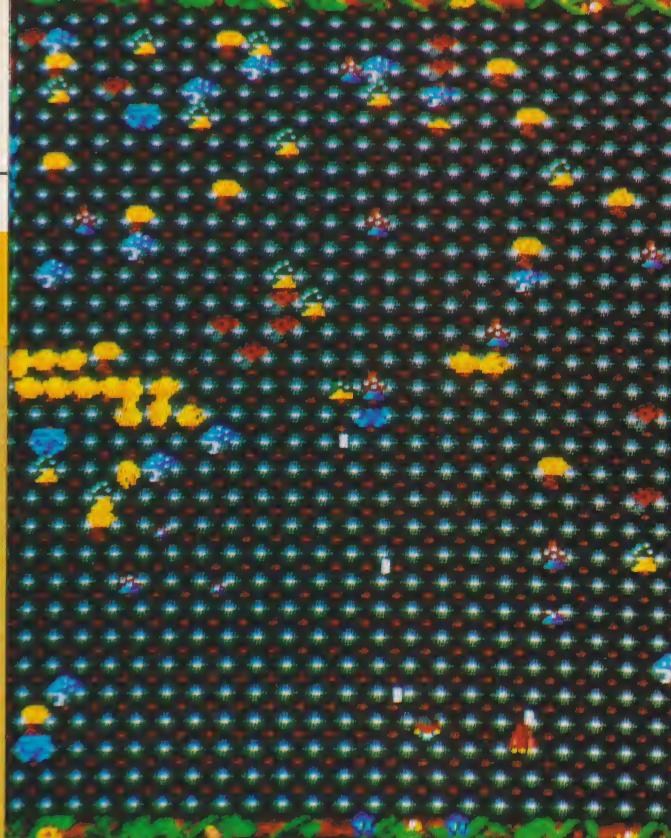
Once you've run out of lives the disc grumbles away and takes at least five seconds to tell you that it's game over time.

Despite the minor loading groans, and the irksome "Type in the word" routine – which only gives you one go and swaps Y and Z around – Evil Garden is quite some game.

The learning curve has been set just right, so you won't feel left out at the start. What does worry me is that the last Centipede clone I saw cost £1.99. Although it didn't have half the prettiness, it had most of the features.

Stewart C. Russell

Evil Garden	£19.99
Demonware	
Sound	██████████
Graphics	██████████
Gameplay	██████████
Value	██████████
Overall –	73%



Bad for the eyes or what?



Very pretty, but it takes ages to load

# TOM AND JERRY

Downhill all the way

such as it is, takes place in various places about the house that are linked by Jerry's mouseholes.

The aim is to guide Jerry through rooms, over shelves and furniture, devouring as much cheese as possible within the time limit of 500 seconds. Tom is in hot pursuit and for every time he catches Jerry you lose 30 seconds. Jerry risks losing a lot more.

You can fight back by dropping books, bananas, bowling balls and other sundry items of cartoon mayhem on Tom and, when all else fails, you can escape down the nearest mousehole.

While inside the mousehole you have to dodge a series of explosive obstacles and traps at high speed, accompanied by a soundtrack that sounds as if it's played by a turbo-



Making a meal of a simple idea

Tom and Jerry	£24.99
Magic Bytes	
Sound	██████████
Graphics	██████████
Gameplay	██████████
Value	██████████
Overall –	51%

charged Russ Conway on a Bon-Tempi organ.

After about 30 seconds or so it all becomes very boring indeed, which is a shame because the concept is good and the graphics aren't bad. There must be scope for a good Tom and Jerry game somewhere. This one isn't.

Mike Rawlins

# POWERDROME

## Flying in the face of the impossible



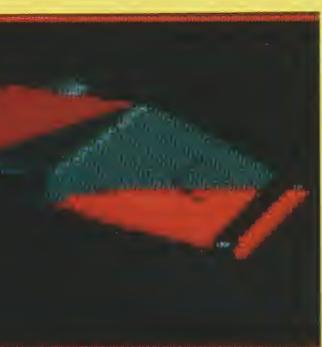
Value

COULD you never find anyone to put the cars back on the track for you when you were playing Scalextric? Did you ever wonder why moths beat themselves to death on light bulbs? The answer to the first problem – and perhaps the second – is now presented in the form of Powerdrome.

This is a very innovative implementation of the old favourite racing game, Pole Position. Where Pow-



Built by EA, driven by Tree Progs



Look what has escaped from Starglider

erdrome really takes off (pun intended) is that the cars have become jet aircraft which race around tracks resembling the M25 of the future.

The track features bumps, bends, flyovers, tunnels, chicanes and, just when you thought it was getting mean, worse things which I won't

even attempt to describe. It's more fun finding out for yourself.

The track is a kind of channel with banked sides, divided into equal chequered sections to give the sensation of speed as they flash past. They also serve as roadsigns.

If the embankment is coloured red and white there is a bend ahead, if



the top of a tunnel is yellow and black then it is curving down ...

There are seven different tracks, each with its own set of interesting features which need a different style of driving to negotiate.

Hazards to watch out for are storms – complete with excellent lightning which impedes your engines unless you stop off in the pits for a change of filters – and the other drivers.

You have four opponents, each in a different kind of ship, who will all try to hassle you. Collisions are quite

rare but can be nasty when they happen. Keep a look out in your rear-view mirror.

There is a very workable datalink option for playing against a similar minded Powerdrome owner communicating via modem or serial cable. The game thoughtfully allows you to copy it for this purpose.

If the unfortunate should happen and you prang a wing or, worse still, the nosecone, you can pop into the robopits for a speedy repair. Here entire sections of your ship can be replaced. You can even get a Quickfit

Gunship  
£24.95  
MicroProse

Sound

Graphics

Gameplay

Value

Overall - 47%

of difficulty by specifying weather conditions and troop strengths.

After a short briefing you can decide whether or not you want to be chicken and call in sick. If you do choose to accept the mission, you have the opportunity to become a hero, earn medals and probably get killed in action.

Start the engine, engage the rotors, increase the collective, put out the cat and cross your fingers.

HELICOPTERS are not flown like aeroplanes. This is why choppers have their wings on the roof, spinning around at 280 rpm.

The angle at which the blades hit the air – known as the collective – controls the amount of lift. By using the joystick you control the overall tilt of the rotor blades – the cyclic – and this moves the 'copter forwards, backwards, left and right.

This is made easier on the Amiga by having an overlay which reminds you of the controls needed. Then there are all the weapons to control and select, because not only are you expected to fly the thing without crashing, but you have to shoot lots of people at the same time.

Before you climb into your \$8m dollar chopper you select your duty assignment and determine the level



Catamarans are legal in this America's cup

engine.

If you have the time you can pop back to the tune-up screen for a bit of adjustment – very handy in the practice laps. Occasionally you may have to refuel here during long races. All the repairs are accompanied by nice stereo sound effects.

Your ship is flown like an aircraft, rather reminiscent of Elite. Control may be mouse or joystick. The programmer seems adamant that mouse control is superior in terms of response time and it is recommended for the serious contender.

But although I tried very hard, it is similar to other mouse-driven games. Unless you have an A0 sized mouse mat and long arms, it's a bit difficult.

Additional controls from the keyboard include an overhead display of the track with all the participants marked on it, a readout of the current positions and a really useful timer which gives the difference between you and the lead car or the lag between you and second place if you are leading.

It takes a while to get used to the controls, so the programmer has included a "centre field" option, like a set of magnetic stabilisers which pushes you towards the centre of the track.

The field reduces your top speed, but it is fully adjustable, so you can gradually lower it as you feel more confident and more determined to beat the best lap times.

For those very special moments the Typhoon craft is equipped with afterburners – handy for excessive speed and reckless driving on long straights. Overuse of them causes the twin engines to burn out. If you use

them in the tunnels you're racing towards an early grave.

The graphics are remarkable, wonderful and fantastic. Don't be surprised if you find yourself falling out of your seat as you try to take a sharp bend – good use of the blitter which suggests the programmer did a deal with Beelzebub.

The sound effects are some of the best I have heard. Wonderful stereo imaging and varying engine noises. Addictive, fast and professional, this

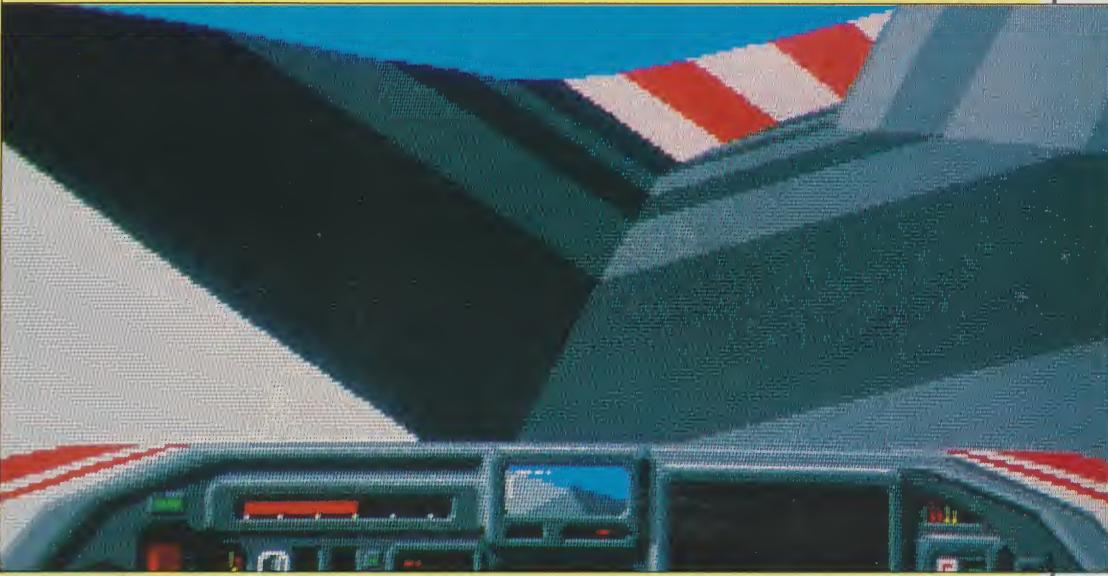
**Powerdrome**  
£24.99  
Electronic Arts

Sound	
Graphics	
Gameplay	
Value	

**Overall – 91%**

must be the definitive racing game. As Frankie almost said: Welcome to the Powerdome.

Green



21st Century Indy

## GUNSHIP

Couldn't hurt a fly

After checking the map you can select your target and head off in the right direction. You have the usual split cockpit display with slightly more than half the screen taken up with dials and warning indicators.

The view out of the window is a solid 3D display, but not up to the standards we Amigans.

For a computer with such capabilities the landscape is bland and slow. Enemy planes are simple prisms which move casually past you. All in all it is very disappointing.

The manual, on the other hand, goes well beyond the call of duty with details about everything and anything.

Four battle scenarios and a training mission are supplied. These tastefully chosen war zones range

from shooting communist guerillas in South East Asia to invading Grenada all over again.

Sound effects are satisfactory helicopter-type noises and simple biffs and bangs whenever things explode. The opening credits are well worth seeing and hearing – look out for them next time you are in a shop.

And give it a good test before parting with your money because my review copy, which by all accounts was a full release version, crashed several times.

As for realism, well I have never flown a helicopter, so apart from the crashes I can't be sure. Everything seems to be sensibly done, but after playing Gunship for a while I have no urge to actually go out and fly a helicopter.

John Kennedy



**Congratulations Amiga Computer**  
**Your performance during training**  
**superior, you receive the Na**  
**Defense Service Medal.**

As warlike as ever

# RUN THE GAUNTLET

**Lose control of yourself**

**R**UN the Gauntlet is a game played on an international scale with four teams from Britain, Holland, Australasia and the USA, all racing against one another in every type of motorised vehicle known to mankind.

The action starts by allowing you and a friend to choose one of the four

countries to represent. The game will then select, apparently at random, a set of three special events for you to compete in. These are mostly three-lap races around a four-way scrolling landscape.

In the corner of the screen a small map is supplied to confuse and annoy you – it rather cunningly bears little or no resemblance to the actual playing area.

The computer controls the two other competitors in the race. You cannot play directly against your friend, and all events are scored by the time you took to finish. During the race the other computer players, whether boats, hovercrafts or cars, simply refuse to let you pass.

If you should bump into them, you will automatically go into a time-wasting spin. The computer-controlled boat will carry on as if nothing has happened.

Exactly the same thing occurs if they crash into you, which is not what you'd really go so far as to call fair. To make things even worse, some psycho is shooting at you.

Trying to steer your player around the screen is so difficult as to make play impossible. Just when you think you have got the hang of it, some prat will shoot you and stop you taking first place. Why? I don't know. I'm sure I would have remembered it if it had been in the TV show.

If you win, or least not come last, you will take part in the next event. If you are really unlucky you will win all three and take part in another series.

Graphically Run the Gauntlet is quite good. With digitised static displays plus passable landscapes and sprites, good use has been made of the Amiga hardware. Your little boat will even leave a shimmering wake as it vainly attempts to take part in the race.

However, the music must be the worst I have heard. A tedious little sampled ditty plays over and over and over again. Even the point when the tune starts and stops hasn't been blended together, so it sounds exactly like a record playing with a stuck stylus.

The only saving grace is 10 seconds of Martin Shaw sampled from the TV saying what a fun time you are going to have. Martin Shaw, if you remember, was the one with the curly hair from the *The Professionals*, a TV series banned because

of excessive violence. His idea of fun is, therefore, to be treated with suspicion.

Run the Gauntlet must rate as the least enjoyable game I have ever had the misfortune to play. How Ocean managed to fill not one, but two discs with such tedium is a miracle of modern 16 bit technology.

John Kennedy

## Run the Gauntlet

£24.99

Ocean

Sound



Graphics



Gameplay



Value



**Overall - 43%**



Henley, here we come



This must be one of these new toll roads we've read about



If you've got three eyes, perhaps you will be able to read the map



## 3.5" FLOPPY DISK DRIVE



- High Quality Japanese Disk Drive
- On/Off Switch • Track Counter
- Full Manual • 12 Month Guarantee
- Through Port for daisy chaining

## 5.25" FLOPPY DISK DRIVE



- High Quality Japanese Disk Drive
- 40/80 Track Switch • On/Off Switch
- Built in 220/240v PSU • Full Manual
- IBM Compatibility with Optional S/W

## 3.5"/ 5.25" MULTI DRIVE



- Superb 3.5"/5.25" Combined unit
- Features as single drives
- Built in 220/240v PSU • Full Manual
- IBM Compatibility with Optional S/W

## AMIGA TURBO 3 HARD DRIVES SCSI, 1.3 AUTO BOOT, + 2MB



AMIGA 500 Turbo 3 with 2MB RAM



AMIGA 2000 Hard Card 40MB

- SCSI Drive with 20, 40 or 80 MB Capacity and Lightning fast Access (28ms/18ms)
- Autoboot with 1.3 Kickstart, Software includes 1.3 workbench • Full Manual
- Very Easy Installation, 2-8 partitions, auto boot disk configuration (1.2 KS only)
- A500 Optional 2MB Ram Board • AMIGA 2000 Hard Card or 2MB SCSI Board
- A500 U/L approved built in PSU and Wisper Fan • A500 & 2000 SCSI Port

## TOP QUALITY MADE IN UK



Superior Triangle Drive



Competitive Product!

All Triangle drives are assembled in England from the highest quality components.

Many designs feature "future proof" circuitry that allows different models of drive mechanism to be connected.

Powered models feature modular 220/240v PSU units for greater safety and come complete with moulded mains plug. Many Triangle drives come complete with complimentary software and all models have comprehensive user documentation. Triangle products are guaranteed for 12 months.

Always ask your dealer for TRIANGLE quality products by name!

**TRIANGLE**  
ELITE



Available at Good Computer Dealers. Trade only call 0234 273248

Mail Order Hotline 800 581 742

# ZORK ZERO

The first and the last?

**M**EGBOZ the wizard, wearing a zap-me-quick hat, has cursed Lord Dimwit Flathead's Great Underground Empire. Your task is to remove the curse and claim a reward of half the wealth of the kingdom.

After casting the curse, Megaboz disappeared in a cloud of smoke, leaving behind nothing but a scrap of parchment. Written on the parchment, which is contained in the pack of goodies that comes with the game, is what you need to do to remove the curse.

The pack forms the nicest kind of protection system you will find. The disc itself is quite unprotected and can be copied easily. But without the pack you will never be able to complete the adventure.

One item is a Flathead calendar for the year 883 GUE. This contains all

sorts of hints and tips such as: "Bottomless pits are the second-leading cause of death in Flatheadia".

Needless to say you have to negotiate a bottomless pit, but make sure you have a light or you might get eaten by a Grue.

Grues are familiar things to anyone who has played an adventure written by Steve Meretzky, the 32-year-old New Yorker with a penchant for melted cheese. Who can forget his pizza in the toilet in Leather Goddesses of Phobos? Did you ever try to eat it?

In Zork Zero Meretzky has written an adventure which is light hearted and at times excruciatingly difficult. It takes a certain type of mind to dream up some of the puzzles.

At one point you need to show the Jester something that has never been

seen before and will never be seen again. The answer is to show him a walnut and then eat it. But to open the walnut is a different matter. With a magic wand and a lobster you should be able to find a way.

This is a new departure by Infocom into graphical adventures. The company always said it would never add graphics to games until it could do the job properly. In some adventures the graphics bear little relationship to the story, but in Zork Zero they are part of the puzzle.

There are several little games to play which rely on graphics. One such is Double Fanucci, a card game with weird rules. You play against the Jester. If the Jester discards the Three of Fromps, should you ionize your Two of Lamps or muttontate it instead? Don't forget, you have to

win at this game!

To anyone who has played a Zork adventure the Jester will be a familiar character. He sometimes helps, sometimes hinders. He is fond of riddles and will often stop and give you one to solve. If you can't fathom it he will not let you pass. An example of one of his riddles is:

*One night four men sat down to play / They played and played till break of day / They played for money; not for fun / With separate scores for every one / And when time came to square accounts / They all had made quite nice amounts.*

What were they playing? I'll give you a clue: They were not playing cards.

Graphics have been used to great effect throughout. At the top of the screen is a compass, so instead of tediously typing letters you can click on the direction with the mouse. This idea is carried further with an on-screen map.

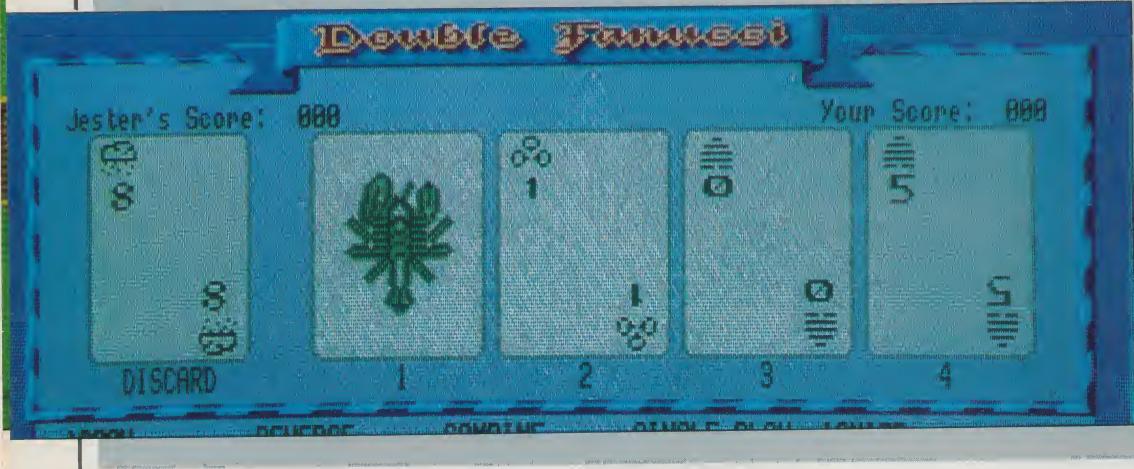
Apart from adding graphics, Infocom has made improvements to the parser. It has always been a cut above the competition, but now it is even better with even more useful features.

One thing I am not too happy about is the on-line help. Type "hint" at any time and you can get full solutions to all the puzzles.

Infocom does suggest you don't make too much use of this feature, but it is all too easy to give up on a problem at an early stage. The first Infocom adventure I played - Planetfall - took me more than six months to complete; I finished Zork Zero in less than a week.

It is hard to criticise Infocom adventures. They are so good. This one could do with more graphics and a better plot. Nevertheless, I enjoyed playing Zork Zero very much and have no hesitation in recommending that you buy it.

Alex Aird



**Zork Zero**  
£24.99  
Infocom

Aura	
Story	
Graphics	
Value	

Overall - 87%

# POWERHOUSE DIRECT

*Special Offers from Power Computing*

commodore



FROM £349!

Prices include VAT, delivery & warranty.  
Please add £15 for overnight delivery.  
All systems are tested before despatch.  
On-site maintenance options available.

■ Amiga A500 complete, now only	£349
■ Amiga A500MM with 1900M high-res mono monitor	£429
■ Amiga A500M with A1084S hi-res stereo colour monitor	£585
■ Amiga B2000 with 1.3 Roms and WorkBench 1.3 Software	£895
■ Amiga B2000M As above, plus A1084S stereo colour monitor	£1125
■ Amiga B2000 XTM As above, plus PC-XT bridge board & 5" drive	£1395

■■■ B2000 + XT Bridge Board + A1084S + 30MB hard disk £1595!



PERIPHERALS

■ A2286 PC-AT board & 5" drive	£775
■ A2088 PC-XT board & 5" drive	£349
■ A2620 68020 Accelerator Card	£1395
■ A2058 8MB Card, 2MB installed	£575
■ A2092PC 20MB MS-DOS hard disk	£239
■ A2092PC 30MB MS-DOS hard disk	£399
■ A2090 20MB AmigaDOS hard disk	£395
■ A2092A 20MB autoboot hard disk	£595
■ A2094A 40MB autoboot hard disk	£995
■ NEC 3½" Internal drive (A2000)	£79

■ NEC 3½" twin-port slimline drive	£89
■ A590 20MB hd disk 2MB RAM OK	£395
■ Amdrive 50MB SCSI hard disk	£459
■ A501 plug-in RAM/clock 512K	£125
■ CM8833 Stereo colour monitor	£225
■ NEC Multisync II 14" Monitor	£525
■ Flicker Fixer Multiscan Adaptor	£375
■ MPS 1230 120 cps draft, 30 NLQ	£139
■ Star LC10C colour 120 cps, NLQ	£259
■ HP DeskJet 300 dpi inkjet, B/W	£675
■ HP PaintJet colour inkjet 180 dpi	£889
■ Xerox 4020 colour inkjet 240 dpi	£1075
■ Supra Modem 300-2400 bps	£189
■ Trackball Marconi RB2	£59
■ 3½" d/s d/d diskettes, per 10	£10

■■■ Vortex 40MB fast hard disk: autoboots from 1.2 Roms! £549

Why not enjoy the free Teletext databases with the MicroText Teletext adaptor... Fully programmable, with Fasttext facility, instant access to last 16 pages, double page view, telesoftware loader, auto-start/background operation... Pages can spoken, printed as ASCII or graphics, saved as ASCII or DIF files... With digital tuning for crystal clear colour TV/sound reception on any A1081/1084/CM8833 monitor... Now displays satellite weather maps tool Available from stock for only £139!



■■■ Amiga 2000 Presentation and AudioVisual systems... Call



PRODUCTIVITY

■ SuperBase Personal	Relational database power, without programming!	£15.95
■ SuperBase Personal 2	As above, plus text, mail merge, batch entry etc.	39.95
■ " Professional v3	With Forms Editor and DML programming language	44.95
■ SuperPlan	Pro Spreadsheet with business graphics, time planner	24.95
■ Maxiplan 500	Ultimate Amiga spreadsheet, + text/graphics/speech	59.95
■ VizaWrite Desktop v2	High performance desktop WP, now with HQ fonts	69.95
■ Works Platinum Edition	Integrated Wordpro/Database/Spreadsheet/Comms	159.95
■ Pagestream	High quality output, Preferences/PostScript compatible	119.95
■ Professional Page v1.2	Includes WP, Desktop, colour separations, CAD	174.95
■ Personal Tax Planner	UK Income Tax computation program, from Digita	39.95
■ A/C Basic v1.3	By Absoft. Compiles Amiga Basic... FASTI	124.95
■ Dos-2-Dos	Reads & writes MS-DOS on 5½" & 3½" Amiga drives	34.95
■ SuperBack	Backs up 20MB in 20 minutes, any Amiga hard drive	39.95
■ B.A.D. Disk Optimizer	Speeds disk access up to 500%, WorkBench or CLI	34.95
■ KindWords v2	£44.95 ■ System Programmer's Guide	32.95
■ ProText v4	79.95 ■ AmigaDOS Inside & Out	18.45
■ Acquisition v1.3	139.95 ■ Amiga C For Beginners	18.45
■ Publisher's Choice	79.95 ■ Amiga Tricks & Tips	14.95
■ Amiga Basic Inside & Out	18.95 ■ Amiga 3D Graphic Prog. In Basic	18.45

■■■ SuperPic real-time PAL colour digitiser and genlock £495!



CREATIVITY

■ Sculpt-Animate 4D	Animagic	£69.95
■ Pro-Video PAL Plus	Photon Paint II	69.95
■ Professional Draw	De Luxe Paint III	62.95
■ Aegis Draw 2000	PageFlipper + FX	79.95
■ X-Cad Designer	Fantavision	34.95
■ X-Cad Professional	Photon Video Cell Animator	79.95
■ SummaSketch Plus	3D graphics and animation for the professional user	319.95
■ PAL Renderle Pro	Professional video titler with fonts, extra fonts available	169.95
■ MiniGen	The ultimate drawing tool. Uses vectored graphics.	129.95
■ DigIView Gold	Pro CAD pack with autodimension, unlimited zoom etc.	179.95
	Entry-level CAD system	89.95
	Professional CAD system (needs 2MB)	399.95
	12x12 Graphics Tablet with fast driver software	425.00
	Broadcast quality genlock for the professional user	625.00
	£105.00 ■ Handy Scanner Type IV 400 dpi	295.00
	120.00 ■ De Luxe PhotoLab	59.95

■■■ IF YOU WANT IT TOMORROW... CALL US TODAY! ON 01-546-7256 ■■■

Prices are POST FREE & include VAT.  
Order by phone with your credit card,  
or send cheque/PAL or your credit card  
number. Official orders welcome. We  
despatch same day by FIRST CLASS  
post. Please allow 5 days for delivery  
of hardware orders. Prices are quoted  
subject to availability.

Ref. A65



**Calico**  
Software

LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256

## MONITORS

Philips CM8833	£225
NEC Multisync II	£499
1 PB Multisync with Flickerfix	£599
All Monitors Include Lead	

## PRINTERS

Star LC10 Mono	£199
Star LC10 Colour	£249
Star LC24/10	£329
Star XB Superletter Qual. 15"	£799
Postscript Laser	£2999
HP Paintjet (UK version)	£899
ROLAND PLOTTERS	from £649

## DISK DRIVES

All Power drives include thru Port and switch. Triangle drives include track counter & "future proof" PCB

We specialise in 2000 Systems!!!	
B2000 2MB SCSI Interface	£599

B2000 8MB	POA
-----------	-----

## SUNDRIES

Printer Lead Parallel	£12.00
LC10 Colour Ribbon	£11.50
LC10 Black Ribbon	£6.50
NEC2200 Ribbon	£7.50
3.5 DS Brand(10) Disks	£19.50
3.5 DS Bulk (50) Disks	£45.00

## SOFTWARE ART, GRAPHICS & CAD

Deluxe Photolab	£49.50
Digipaint 2	£32.00
Express Paint 3	£68.00
Fantavision	£29.00
Photon Paint	£49.00
Pixmate	£39.00
Sculpt 3D	£59.00
Sculpt 4D	£326.00
Digiview Gold	£115.00
Comic Setter	£49.00
Movie Setter	£49.00
Turbo Silver	£99.00
Video Magic	£79.95

## HARD DISKS B2000

Hard Card 40MB	£599
SCSI+2MB OK	£299
20MB+2MB OK (68ms)	£449
40MB+2MB OK*	£649
100MB+2MB OK	£999
2MB Memory	£299
Hard Card 40MB SPECIAL	£549

\*Add £69 for Quantum 11ms Drive

## UTILITIES & LANGUAGES

Dos to Dos	£29.00
Quarterback	£35.00
Transformer	£25.00
BBC Emulator	£35.00
Atredes BBS	£169.00
Power Windows 2.5	£41.00
Lattice C Dev. v5	£159.00
Aztec C Developer	£169.00
Hisoft Devpack	£45.00
Hisoft Basic	POA
Ruby Comm	£72.00

We specialise in Mail Order but we also now have a new retail store with demonstration studio. Opening times are from 9.30-5.30 Mon-Sat, although if you can call, we are often "Amiga Mad" till late!

POWER HOUSE  
DIRECT  
0234 273000

Prices include VAT & UK Delivery

ORDERS ONLY 0800 581 742

GENERAL ENQ. 0234-273000

Callers & Mail to:

44A STANLEY STREET

BEDFORD

MK41 7RW

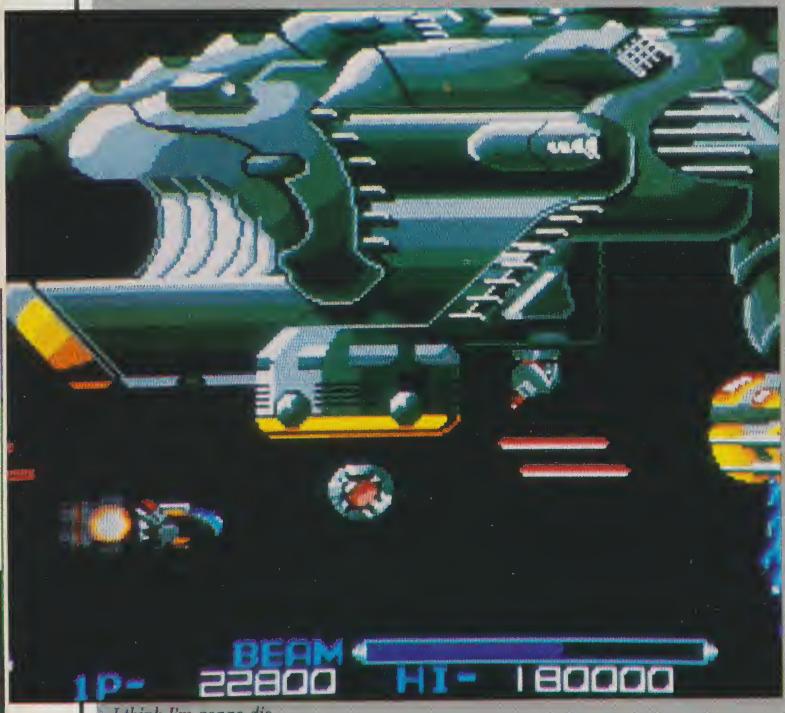
Prices are subject to change

31.8.89

POWERHOUSE DIRECT is the Retail Division of POWER COMPUTING!

# R-TYPE

## Setting the benchmark



I think I'm gonna die



In five seconds you will be heartbroken

EVERY court case has two winners – the solicitors. R-Type is the result of another case where the losers won. Factor 5, a German software house wrote a scrolling shoot-em-up called Katakis.

This was published by US Gold until Activision complained that Katakis looked too much like R-Type, a licence Activision guarded with zeal, as you would if you had paid Irem, the Japanese originators, lots and lots of yen.

US Gold had Katakis modified to look less like R-Type and called the result Denaris. So Factor 5 wrote two games which looked pretty similar. But the best was yet to come. Katakis was such a good R-Type ripoff that the Germans were chosen to produce the official version.

They have done a brilliant job.

Purely in the interests of research I visited an arcade to check out the original. I used not to be very good at R-Type, but after three days' intensive practice on the Amiga version I

sailed through the first two levels of the arcade version.

Friends in the arcade were well impressed. This reveals two things about the conversion. First, the timing and feel are spot on. Second, the Amiga version is much harder than the coin-op with standard settings.

Increased difficulty is no bad thing. At 20p a go there is a strong disincentive to practice. If you've shelled out 100 times the amount and then all the games are free, you'll play until your fire button finger is sore. Then you will play some more.

The programmers clearly know and love the Amiga. The game oozes slickness. Graphics are not quite up to the money-munching original but they are pretty close.

Speed does not seem to be affected by swarms of encroaching aliens, the massive end-of-level guardians nor your unleashing megatonnes of death by building up loads of weapons.

Pick up a shield, ripple lasers, side firing lasers, seeking missile and some side shields and no enemy poses a real threat. But if your finger slips on the sweaty trigger and you lose a life at a crucial moment, it is still playable.

Dedicated gamers will argue that if you lose extra weapons early you might as well give up and go back to the start. This takes some patience because you have six credits and the temptation is to use them regardless of tactics.

A well-programmed conversion of one of the best games in the arcades is the most you can hope for. The music doesn't grate, neither is it great, but the result is spot on.

Denaris may be a better game for its deviation from the original, but R-type is the benchmark by which other games of this ilk must be judged.

Simon Rockman

R-Type  
£24.99  
Electric Dreams

Sound	
Graphics	
Gameplay	
Value	

Overall - 86%

EVERYBODY must have at some stage in their life watched a film and wished they could be the hero. Well if your hero is the same as mine, Godzilla in The Beast That Ate Tokyo (b/w 1949), your hour has come.

Rampage puts you in the role of one of three towering monsters: a giant King Kong type, a vastly oversized werewolf or the old favourite Godzilla. What is your objective? Simple - smash, maim, kill, destroy, obliterate ...

Each scene begins with our assembled heroes on the pavement outside some suspiciously fragile-looking buildings. Do what comes naturally. If you find it hard to get motivated into all this anti-humanitarian destruction, think of what destruction on this scale will do to all the estate agents and insurance salesmen.

When the place is completely decimated you move on to the next town - of which there are 738, all the way from Peoria to the dark side of the moon.

In an effort to prevent you from turning the civilized world into a Beirut lookalike the Army has pos-



*Hey, Harry, what's your pet monkey doing on the roof? Well, they told me it weren't allowed in the flat*

## RAMPAGE

Sure to be a monster hit

**Rampage**

£24.99

Activision

Sound

Graphics

Gameplay

Value

**Overall - 61%**

itioned SWAT teams in cunning vantage points from where they assault our metamorphic monsters.

King Kong will have more to deal with than a few pathetic biplanes this time as a few helicopter-guns ships enter the fray, strafing wildly.

Later tanks appear with more advanced firepower, which can cause a fair amount of pain judging by the expression of the stricken beast.

Each hit you take may not inflict much damage, but it all adds up. The only way you can make up for this is by eating regularly. What do you eat? Well, as you are climbing the sides of buildings, smashing as you go, you may notice that some kind people have left out some food, milk, toast or even their goldfish for you.

If they haven't, that's OK because you can always eat the people and have a few choppers for dessert.

Up to three people can play at a

time, though using the keyboard is verging on the impossible. If the players are not friends, you will be pleased to know the monsters can beat each other up as well as the buildings.

There is not much by way of a plot, it's just mindless destruction, which is perhaps more honest than many games on the market that try to dress up violence, destruction and general bad behaviour as being brave and noble as long as there is a cause to be championed.

There is no "fight the good fight" here unless you're in the Animal Rights Militia. There is a small amount of romance though. Occasionally a girl will appear in one of the windows. She can be rescued for extra points. You can eat her afterwards, of course.

Graphically the game is very pretty and the animation of the monsters is excellent, from the defiant growl and shake of the fist to the way they cover their eyes when they fall off a building.

Sound is adequately supported. There are some nice stereo effects with the toppling buildings and a satisfying chomping noise when the beasts tuck into a human.

Green



**Trained Assassin**  
£24.95  
Digital Magic Software



ONE of life's more cuddly ironies has to be the arcade conversion. We spend many hours and pounds for the thrill of seeing our initials on the screen in a (possibly) rather dodgy establishment. After a while we dig out some more cash to spend on the home computer conversion, which we batter away at for a few days.

All we get to keep is our initials on the screen and a very short-lived hit of adrenalin. The other parties involved get our money in large quantities. Who gets the better deal? he asks in a concerned Channel 4 consumer programme kind of a way.

Because conversions cost publishing houses a lot of money, wouldn't it be cheaper to nick some good points from popular games and add a completely flimsy to the point of being see-through plot?

Wouldn't Robert indeed be your parent's sibling? Ah, but games like that are easily found - in the bargain bin, at the back of the software drawer, in a skip...

Without polish or class, or at least some good honest hype, more money is lost than saved.

Currently, Digital Magic Software - or DMS to those who want to sound in with them - are doing with arcade games what Frankenstein did with dead bits, although with a slight difference. Frank took the best bits but kind of spoiled them all when joining them together. DMS takes good ideas, stitches them together with good coding and the joins are nowhere to be seen.

DMS, to use another tedious analogy, are the Classic Car restorers of the computer entertainment world.

Trained Assassin has got more arcade elements to it than a fan heater on Brighton Pier. On the lowest level it's a scrolling shoot-'em-up with add-on weapons; no chocolate watches awarded for originality.

It's got five levels. "Zz zz zz," comes the reply. It's got a tiny plot, all about destroying King Rhizoflagellates and creatures "whose touches are fatal". With one mighty, apathetic accord, humanity manages a deafening "!" Not very

# TRAINED ASSASSIN

The killing screens



Tim White caught in pixels

impressive sounding, is it? But read on.

There's a fair amount of money in the trained assassin business; there's equally as much in the untrained assassin business, but it goes to the next of kin. There would certainly need to be big cash involved to face King Rhizoflagellates's hordes of nasty things, all of them with more kick than an uprated onion bhaji.

The standard weapon deals quite adequately with the first few waves, but things very soon get out of hand. You'll need the laser and the orbiting-buddy weapon to even think of getting rid of them.

Each stage can be learnt; in fact it's vital to do so because some bits are dead ends and you get crushed by the relentlessly scrolling scenery. There isn't as much scenery as you'd expect in an arcade machine, but there's certainly enough to get in the way.

The first level has slightly futuristic bits all over the place, like a simplified R-Type. It's fairly predictable once you learn where to go and what not to do and ends with a fairly

traditional Big Nasty Dragon. It serves as a good warm up for the rest of the game and has enough initial wow-value to keep any gonzo arcadist happy.

The second level scrolls down the way, which causes some problems because your main weapon shoots horizontally. It has bubbly scenery, not dissimilar to Starquake, the old 8 bit Bubble Bus classic. It is extraordinarily difficult, far more so than the third level, and could spoil the game if you can't suss what to do.

Level three has a desert-cum-ancient Egyptian feel to it, but has the added twist of seemingly solid scenery, which can only be got past once shot.

It's a good level, loads of traps for the unwary and just as many for the fully clued-up. It scrolls horizontally but, unusually, from left to right.

Level four isn't for the weak of stomach, nor those who have eaten within the previous hour. It's got flying eyeballs, leaping protozoa, and tracker tumours. This has got to be one of the most tasteless levels of a computer game I have ever seen, but is a difficult blast because the scenery

moves upwards. Me, I nearly lost my lunch.

The final level is everything a final level should be: excruciatingly difficult, but with features learnt from previous levels. It is uncomfortably similar to R-Type and more difficult than all the other levels put together.

When you cop it - notice the "when", not "if" - you get put back to the very start of the level; a pest, but you should have learnt what you did wrong and will be able to avoid it next time.

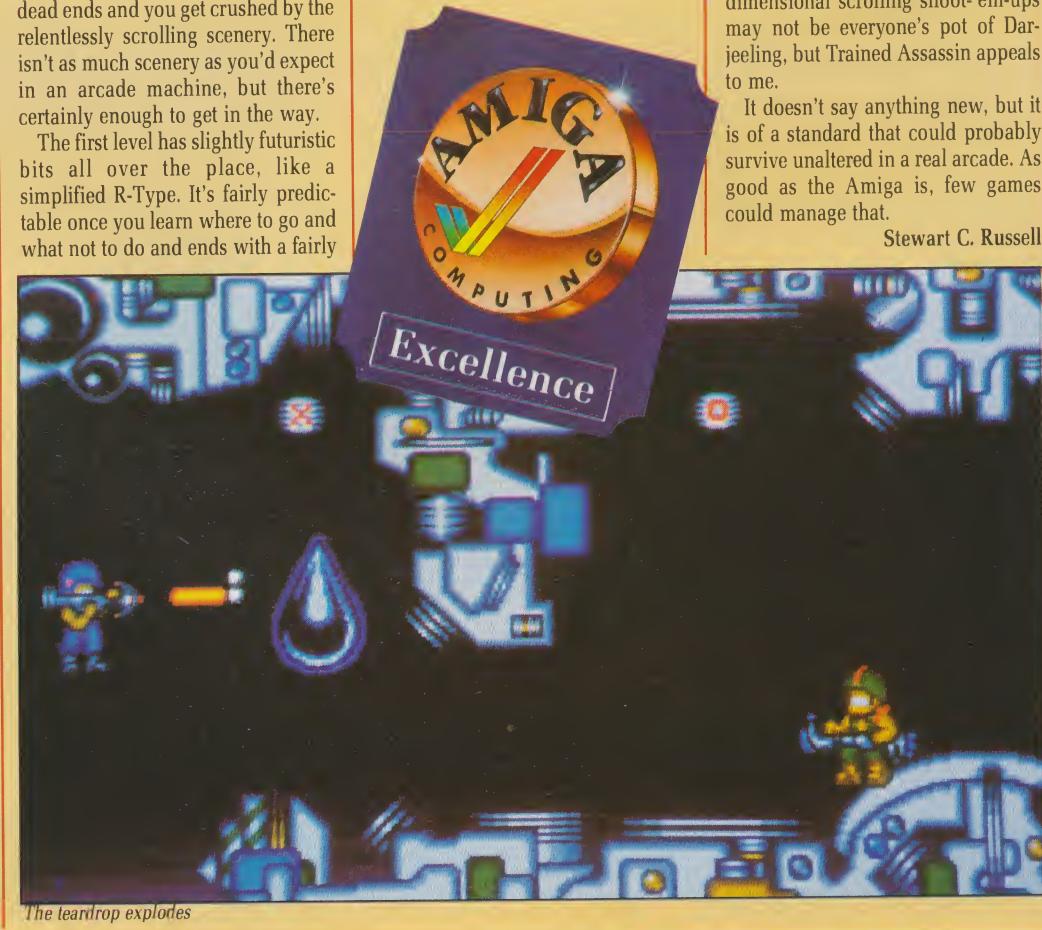
The team of Burt on coding, Derrett and Law on graphics, and Harris on sound has made Trained Assassin a very fine game. Better, even, than the last DMS offering, Scorpion. Everything moves quickly and smoothly without fuss or flicker.

The presentation is much better than in Scorpion, with a very nice Tim White illustration on the box, poster and title screen. The effects, although loud and atmospheric, aren't much more than OK. The same cannot be said for the title tune, which even manages to sound good through headphones.

I appreciate that rather one-dimensional scrolling shoot-'em-ups may not be everyone's pot of Darjeeling, but Trained Assassin appeals to me.

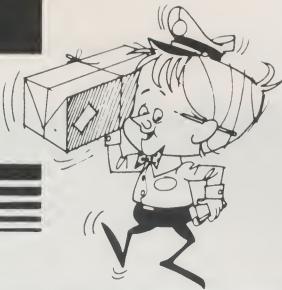
It doesn't say anything new, but it is of a standard that could probably survive unaltered in a real arcade. As good as the Amiga is, few games could manage that.

Stewart C. Russell



The teardrop explodes

# BYTEBACK



**FAST**

**DELIVERY  
SERVICE**

... and the keenest prices

**Ring us now! 0636-79097** we're programmed to help

**GUARANTEED RETURN OF POST Delivery on ALL Stock items!**

**INTERNATIONAL ORDERS WELCOME**

**GAMES ONLY!**

Alter Burner	16.90
Airball	13.90
Alien Syndrome	16.90
Alternate Reality	13.90
American Ice Hockey	16.90
Annals of Rome	16.90
Archipelagos	16.90
Baal	13.90
Balance of Power 1990	16.90
Ballistix	13.90
Barbarian 2	16.90
Bards Tale	16.90
Bards Tale 2	16.90
Batman the Caped Crusader	16.90
Battle Chess	16.90
<b>Battlehawks1942</b>	<b>16.90</b>
Bio Challenge	16.90
Blasteroids	16.90
Bombouzal	13.90
Breech	16.90
Buggy Boy	16.90
Butcher Hill	16.90
California Games	16.90
Captain Blood	16.90
Captain Fizz	11.45
Carrier Command	16.90
Chessmaster 2000	16.90
Chrono Quest	18.90
Chuckie Egg	13.90
Chuckie Egg 2	13.90
Corruption	16.90
Cosmic Pirate	13.90
Crazy Cars II	16.90
Dark Fusion	16.90
Denaris	14.90
DNA Warrior	13.90
<b>Dragon Ninja</b>	<b>16.90</b>
Dragons Lair	39.90
Emmanuelle	13.90
Federation of Free Traders	19.90
Ferrari Formula One	16.90
Flight Simulator 2	29.90
Jet	29.90
*Scenery 7 or 11	16.90
*European scenery	13.90
*Japan scenery	13.90
Football Director 2	13.90
Football Manager 2	13.90
Fright Night	13.90
Fusion	14.90
Galdregons Domain	13.90
Games - Winter Edition	14.90
Garfield	16.90
Gary Linekers Hotshots	16.90
Gauntlet II	16.90
Hybris	16.90
Incredible Shrinking Sphere	16.90
Interceptor	16.90
International Karate Plus	16.90
Kennedy Approach	16.90
Kenny Dalglish Soccer	13.90
<b>S.E.U.C.K.</b>	<b>19.90</b>

**GAMES ONLY!**

Paladin	16.90
Phantom Fighter	13.90
Pioneer Plague	16.90
Police Quest	16.90
<b>Populous</b>	<b>17.90</b>
R-Type	16.90
Reach for the Stars	16.90
Real Ghostbusters	16.90
Realm of the Trolls	16.90
Roadblasters	16.90
Robocop	17.90
Rocket Ranger	18.90
Romantic Encounters (18+)	13.90
Run the Gauntlet	16.90
Scrabble Deluxe	13.90
Shadowgate	16.90
Space Harrier	13.90
Space Quest II	16.90
Speedball	16.90
Steve Davis World Snooker	13.90
<b>Strip Poker 2+</b>	<b>9.90</b>
<b>*Data Disk</b>	<b>6.90</b>

Super Hang On	19.90
Sword of Sodan	16.90
Tales of Lore	16.90
Tech	16.90
Teenage Queen	13.90
<b>Test Drive II</b>	<b>19.90</b>
<b>*Test Drive II Cars</b>	<b>11.90</b>
<b>*Test Drive II Scenery</b>	<b>11.90</b>
Titan	16.90
TV Sports Football	19.90
Ultima IV	16.90
Voyager	16.90
War in Middle Earth	16.90
WEC Le Mans	16.90
Willow	16.90
World Tour Golf	16.90
Zak McKracken	19.90
Zany Goff	16.90

**CHILDRENS ONLY!**

AB Zoo	9.50
Fun School 2 (-6/6-8/8+)	13.90
Decimal Dungeon	29.90
Kid Talk	29.90
ConSOUNDtration	27.50
Match-it	27.50

**ROBOT READERS - WITH SPEECH!**

Aesops Fables	19.90
Chicken Little	19.90
Little Red Hen	19.90
Three Little Pigs	19.90
Ugly Duckling	19.90

**COMPILATIONS ONLY!**

PRECIOUS METAL	16.90
Xenon, Capt. Blood	
Crazy Cars, Arkanoid II	

**TRIAD - 3 Game Pack**

Barbarian, Defender of the Crown, Starglider	18.90
Goldrunner, Karate Kid II	
Jupiter Probe, Slaygon	

**HIT DISKS (Vol. 1)**

16.90
Major Motion, Time Bandit
Leatherneck, Tanglewood

**HIT DISKS (Vol.2)**

16.90
Plutos, Mouse Trap, Seconds Out
Winter Olympiad, Suicide Mission

**MEGAPACK**

16.90
Thai Boxing, Karting Grand Prix, Grid Start,
Flight Path 797, Las Vegas, XR35

**SUPER 6**

16.90
Return to Genesis

**PACMANIA**

13.90
Pacmania

**Box of 10 SONY Disks**

15.90
-------

**HARDWARE ONLY!**

*** ALL COMPUTERS INCLUDE ***
Mouse, Manuals, Modulator, Tutorial 1Mb Disk Drive, (NEW) Kickstart 1.3

**AMIGA A500 Computer**

£369

**AMIGA A500 Games Pack**

£399

**1084-S Monitor**

289.00

**A501 RAM/Clock Expansion**

135.00

**minIGEN**

99.90

**STAR LC10 Printer (Mono)**

229.00

**STAR LC10 Printer (Colour)**

259.00

(All printers include lead)

**Cumana 3.5" 1Mb Disk Drive**

99.00

**SPECIAL PACKS ONLY!**

**PACK 1**

359.99 239.90

**\* 1010 Disk Drive**

**\* A501 RAM/Clock**

**\* Superbase Personal**

**PACK 3**

439.95 279.90

**\* MPS 1230 Printer**

**\* A501 RAM/Clock**

**\* Superbase Personal**

**PACK 4**

599.86 399.90

**\* A501 RAM/Clock Expansion**

**\* 1010 Disk Drive**

**\* MPS 1230 Printer**

**ART & MUSIC ONLY!**

**TV Show**

52.50

**Aegis Anim8/Images**

59.90

**Comic Setter**

59.90

**Movie Setter**

59.90

**Deluxe Paint 2**

49.90

**Deluxe Print 2**

34.90

**Deluxe Paint 3**

64.90

**Fantavision**

34.90

**Instant Music**

17.90

**Modeler 3D**

59.90

**Pixmat**

37.90

**Design 3D**

59.90

**DigiView Gold (PAL)**

119.90

**Furry Mouse Cover!**

6.90

**Mouse Bracket**

2.90

**Mouse Mat**

5.90

**Keyboard Cover**

5.90

**ACCESSORIES ONLY!**

**Locking Disk Box (30+)**

5.90

**Locking Disk Box (50+)**

7.90

**Locking Disk Box (100+)**

9.90

**Media Box (Holds 150)**

19.90

**3.5" Disks DS/DD (x10)**

9.90

**3.5" Disks DS/DD (x50)**

45.00

**Box of 10 SONY Disks**

15.90

**Furry Mouse Cover!**

6.90

**Mouse Bracket**

2.90

**Mouse Mat**

5.90

**Keyboard Cover**

5.90

**Spaceballs**

Major Motion

**Tetra Quest**

Mach 3

**Goldrunner II**

Final Assault

**Bionic Commandos**

Elf

**Bobo - Stir Crazy**

Dugger

**Wizball**

Whirligig

**Iridon**

Terramex

**Ebonstar**

**BOOKS (Abacus) ONLY!**

Amiga

# S.T.A.G.

The bin's too good for it

**A**PPARENTLY in the year 2567 Earth gets destroyed. A big shame. Some survivors, who presumably had been out walking the dog at the time, decide to set up a trading company. They plan to exploit the alien worlds, all of which have less sense of economics than Nigel Lawson. With a small cargo ship they ply the spaceways trying to con anything they meet.

This is the plot to Stag. It seems a little familiar, right? It sounds a little like Elite, doesn't it? There is a subtle difference though. Elite was good. It had animation. It had gameplay. Above all, it was fun. Stag, on the other hand, is pathetic.

It has been semi-converted from a German game. I say semi-converted because it is only partly translated into English. A few

things have been left out. Like grammar. And sense. It doesn't really matter - you don't have to understand it to realise how terrible it all is.

Another stunning concept is that the game is completely mouse driven. In itself not very original, but the underlying philosophy of making it completely impossible to do anything without having to make 67 factorial button presses and generally work the ball off your mouse is.

I expect EAS will be bringing out a mouse-only text adventure next. Or perhaps a word processor where you choose your next phrase from one of 8,000 icons.

Trading means haggling with strange creatures over a limited range of goods. When I say haggle I mean it in a strange new sense of the word where you tell the other bloke his price is way out and he tells you to go away. Not much scope for Thatcherite entrepreneurial acumen there.

You are not given information about any of the other planets, so it's pot luck whether they actually want the stuff when you get there. Oddly, the entire galaxy lives on a diet of milk and alcohol. Perhaps they listen to too much late 70's rock music.

The space flight sequence is the best part. This does not mean it is

good, it's just better than the rest. Does the ship glide silently and majestically through stardust panoramas? No. It flies through squares. Or space-streets as EAS would have it.

It's very reminiscent of Mastertronic's Chase, which can only be bad news. If the ship hits the sides it loses shields and eventually disintegrates. Amazing.

Sometimes pirates attack your ship. You will know when this happens because you will suddenly stop flying through squares and some text will appear telling you that some pirates are attacking your ship. Just as well. You would never work it out otherwise. Some small blobs appear on the screen. They get bigger. You die.



Amazingly EAS has password protected this offering. Perhaps the company reckon software pirates are as stupid as the ones in the game. If anyone is doing a bit of shady dealing here it is EAS trying to offload this lack-lustre effort for twice the price of the original Elite.

Green

S.T.A.G.	£24.95
EAS	
Sound	[Red]
Graphics	[Red]
Gameplay	[Red]
Value	[Red]
Overall	- 11%

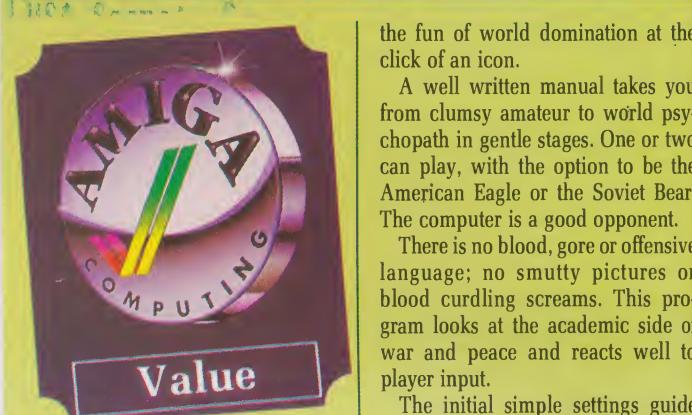
**Advisory: Nicaragua**

This is a touch risky.  
We can go either way here.

I don't think we can win this.  
We can go either way here.

**Sphere of Influence:** Neither  
**Insurgency:** rampant terrorism  
**Rate of Change:** Insurgency growing

USA	USSR
Relation: enemy	warn
Milt Aid: \$0 million	\$400 Million
Insrg Aid: \$100 million	\$0 million
Intrv-gvt: 0 troops	100,000 troops
Intrv-reb: 0 troops	0 troops



the fun of world domination at the click of an icon.

A well written manual takes you from clumsy amateur to world psychopath in gentle stages. One or two can play, with the option to be the American Eagle or the Soviet Bear. The computer is a good opponent.

There is no blood, gore or offensive language; no smutty pictures or blood curdling screams. This program looks at the academic side of war and peace and reacts well to player input.

The initial simple settings guide you through a predetermined set of moves to show what effect different decisions will have. After this you get to try out the various menu options. A wrong decision could accelerate you to Defcon 1 and the chance to wipe out the entire planet.

If perchance you do cause thermonuclear global conflict, a simple text

**H**ERE we have one of those games where even the Amiga's sound chip wouldn't be good enough. You need a recording of Ride of the Valkyries (Wagner's Ring Cycle, Deutsch Gramophon) and the urge to destroy your fellow man. Ah,

**S**OMEBODY somewhere is doing a rather nice line in hot motors. The FBI want this stopped. The annoying thing is that the felons are corrupt policemen who can bring the law to bear on anyone they take a dislike to.

So those awfully nice FBI people have called you in and given you an F40 with a neat line in bolt-on goodies.

You must drive across four states before the corrupt policemen roadblock all the exits. Your onboard computer will tell you which freeway exits to take, but won't know if the way is blocked or not.

Crazy Cars II	£19.95
Titus	
Sound	[Red]
Graphics	[Red]
Gameplay	[Red]
Value	[Red]
Overall	- 43%

The radar detector can tell where the nearest police car is and can be used to check for roadblocks. It's also very handy for keeping clear of

# BALANCE OF POWER

Let's not beat about the Bush

screen tartly informs you that there will be no animated mushroom clouds. There are no rewards for failure.

I can't stop playing Balance of Power. What started as a few decisions about whether to drop troops or dollars somewhere has escalated to form a habit. The further I get, the more I want to do.

There is always something new around the corner and the inclusion of 80 countries, all reacting independently, means that there is no chance you will exhaust the possibilities. If you get stuck, a crisis advisory service appears at decision time and gives you a clue as to which way to turn.

You start in 1989 with a reasonably stable planet. If you can maintain stability the game can last eight years, after which the winner will be the side with the most prestige. I've played solid for 14 hours and couldn't last longer than three years. Then again, I always was quick on the button.

To help you to decide whether to give a country aid in cash or troops, a screen lists the political persuasions, stability and stuff like that. If you are playing as the good ol' US of A and you give too much help to neutral Sweden, uncle Gorby gets a tidy bit miffed and puts you in a precarious position. Ouch.

I started at the beginners' level and worked through intermediate and expert. As I went up each level and the amount of factors that the pro-

gram used got more complex, the results I got began to mirror history.

There's nothing like a bit of realism, so I got out the history books and looked up a couple of the more delicate diplomatic situations from the 'sixties, when the Bear and the Eagle were at each other's ambassadors.

I couldn't hope to simulate them accurately, but the basics were there. Using the world as a three-dimensional chess board, I made the USA moves to see how the USSR would react.

I then reversed the roles and played the USSR. As both superpowers had blamed each other for the initiative in the 'sixties, it was

interesting to note that the only way to get a similar result was to cast the USA in the role of aggressor. Tut-tut, President Johnson. And you said it was them.

In the levels up to expert the game takes the rather simplistic us-and-them stance. It only calculates the reactions of the two main powers and anything else brought into direct action.

In the final multipolar level Balance of Power gets closest to reality with the computer calculating the reactions and decisions of all 80 countries.

In fact it's quite uncanny. The results at this level were accurate enough to write a newspaper article

**Balance of Power**  
£24.99  
Mindscape

Realism	
Strategy	
Gameplay	
Value	

**Overall - 88%**

which wouldn't have looked out of place at the time.

If this sort of simulation can get so close to actual events, perhaps we should send Bush and Gorby an Amiga each and let them get on with thermonuclear war in the comfort of their own palaces.

Keith G. Pomfret



Watch out for the China crisis

## CRAZY CARS II

One to steer clear of

honest policemen, who take extreme exception to the speed limit being exceeded by 145 mph.

The FBI has rigged the engine to explode if you don't make the checkpoint in the set time.

The engine also happens to explode if you hit anything – car, lamp-post, bollard – or travel too fast for too long off the road.

And that's all there is to it.

CC2 is difficult and very frustrating. It must be the only game to give a car inertia – it becomes very easy to spin uncontrollably at high speed.

What Titus hasn't put into the

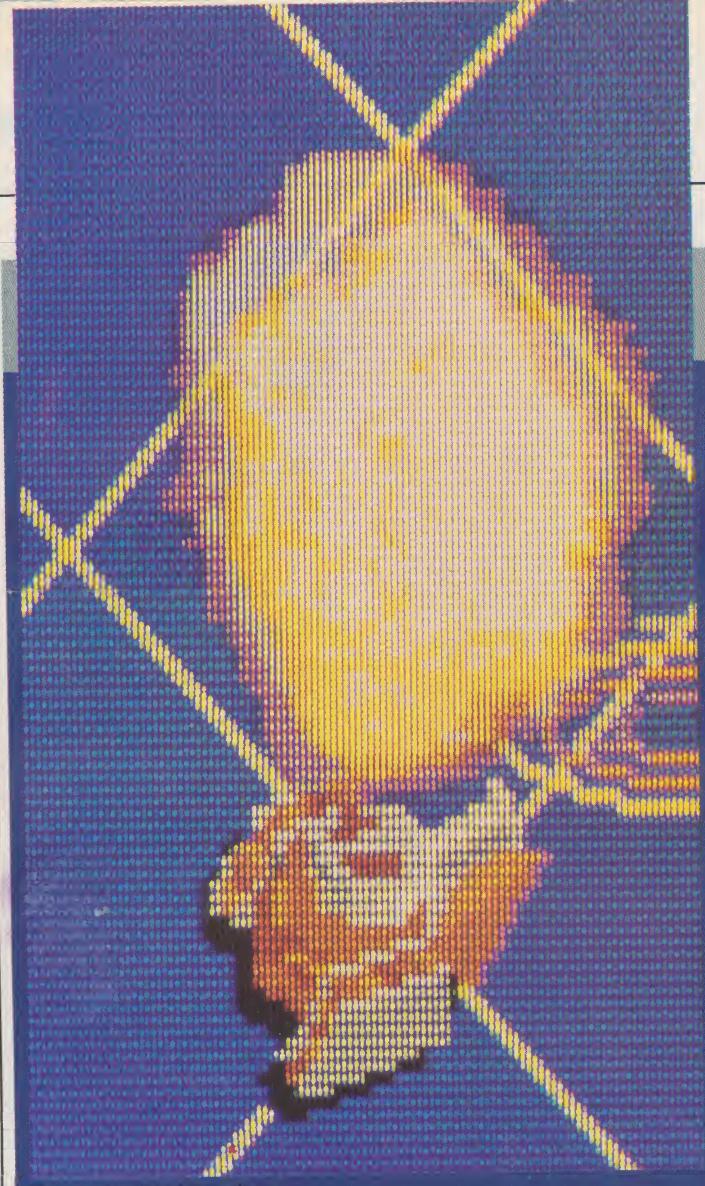
handling is the natural way steering wheels return to their centre position.

I don't know how Titus can keep a straight face when it claims that the screenshots on the box are the same as the graphics in the game. They're not, they are re-touched saved screens, not ones from the game.

With the handling of an elderly 2CV, the sound of a sewing machine, and graphics which wouldn't be noteworthy on the machine which starts with an S and ends with a T, Crazy Cars II will appeal to somebody I'm sure. Possibly one for a connoisseur of the truly mediocre.

Stewart C. Russell





*This was too close for comfort*

#### Dark Side

£24.95

MicroStatus

#### Sound



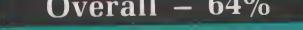
#### Graphics



#### Gameplay



#### Value



Overall - 64%

WELCOME to another adventure using the Freescape 3D environment, Dark Side, the successor to Driller, set 200 years

later. It stars those enemies of the Evath, the Ketur, in another bid to destroy life as we know it.

It all started with a probe passing over the dark side of the moon Tricuspid detecting a plexar just before being destroyed. A plexar is a giant construction designed to fire a high-energy particle beam at Evath, blowing it apart. It is fed by Energy Collection Devices – or ECDs – which

HERE'S a surprise – a fleet of hostile space stations is loitering with intent just 53 miles west of Venus. The burghers of Planet Earth are getting understandably hot under the collar. It's a good job then, that they've just developed a mega battle tank, the SR-88 Vindicator.

Let me guess which patsy has been volunteered to drive the thing? Merv Klein from Athens, GA has just sawn his leg off for charity, so you're the only one qualified. What a surprise.

Once through the Van Allen belt you get a chance to check out your dinky little engine of destruction. Despite its jaunty paintwork and rotational controls, this jalopy packs quite a punch.

If you're not too familiar with the vehicle, Mission Control suggests you take on the first station because it is entirely staffed with nerds. Stroll in, knock off a few brainless tanks and gun emplacements, get the key and exit to the next level. Easy.

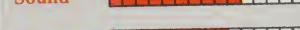
The staff are so stupid that they've left all their Action Man stars lying

#### Vindicators

£19.99

Domark

#### Sound



#### Graphics



#### Gameplay



#### Value



Overall - 68%

about time for the picking. Collect enough of these and you can choose new bolt-on goodies when you get back to your ship. The best ones to get are the Increase Shot Range tokens, which allow you to take out things before they do the same to you.

As with the arcade original these tokens are cumulative, so it's relatively easy to upgrade your tank to something fairly intense. Some Smart Shots can come in handy, especially when things are getting out of hand.

Once through to the top level your task is to destroy the control centre, which can be a valuable source of bonus bits if you don't mess up and get trashed with the rest of the centre.

If you choose to play this the two-player way the dominant player can

# DAR

Challenging alive

which are tank-like defenders, the slab-like power porters and the telepods, which must be activated by hidden crystals.

You start in a sector of the moon guarded by a plexor and decorated by a few tree-like constructions. Moving forwards in full 3D, the first objective is to avoid the plexor and penetrate the next sector where you can destroy an ECD.



Furnished by MF!



And not a Floyd quote in sight

# VINDICATORS

Tanks, but no tanks

nick all the good bits, leaving the garbage to the other sucker. You people wouldn't do that, would you?

Once you've endured the tacky soundblaster, and man is it tacky, you get to the next space station, which has a few less needs and loads more tanks. In fact tanks a million! Spike Milligan's the one to blame for that one.

The graphics are, as they should be, really faithful to the arcade, with

all the right things appearing at the right time. The sound is exceedingly faithful to the arcade as long as you are used to hearing it through several layers of old socks. It's busy and frankly it stinks.

One small problem surfaces when large amounts of scenery start appearing. The darn thing slows down to a snail's pace because the programmers felt they had to use software sprites to achieve the

desired effects.

Hmm, they probably had to use 200 fog screens for the desired effect, too. And that desired effect, dear readers, is to make the Amiga conversion a quick job after the ST one. The programmers claim memory problems.

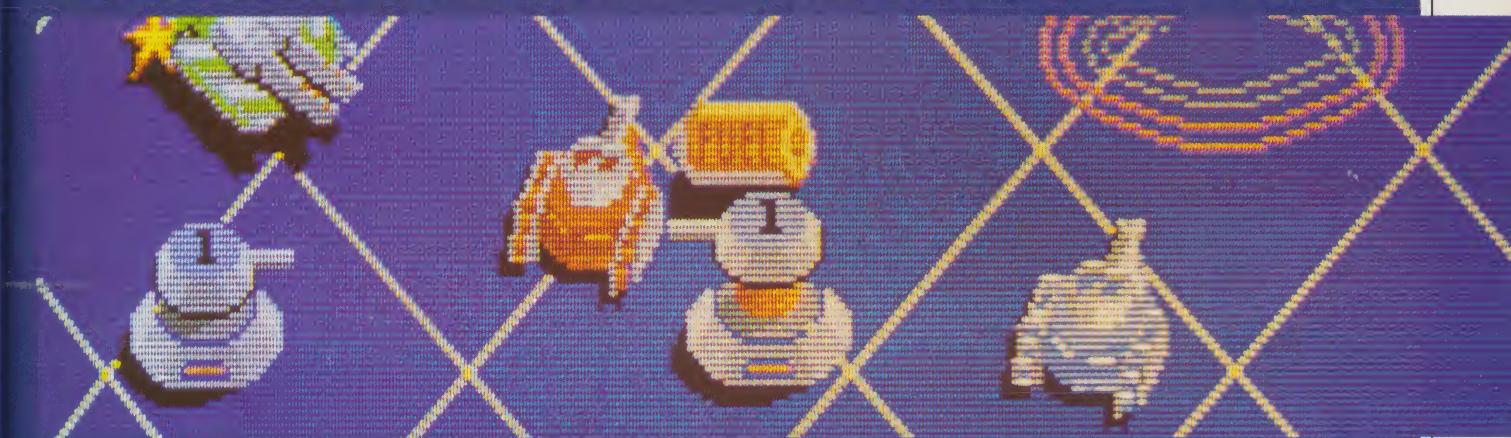
Don't get me wrong, Vindicators is an exceedingly playable game that stopped me loving with Delika for a while. The graphics are good, it's just

that when things start getting sticky they also start getting slow.

The 652 board – that's what's in the A500 – is capable of a lot more than just a bare 68000; the conversion is faithful, but not well done.

If Biomark hadn't cut corners, Vindicators would probably have got an Excellence rating. At least we haven't been charged an extra fiver for a poor ST port.

Stewart C. Russell



*Now you are both low on fuel, the course is a capsule becomes even more important than the ultimate task.*

## DARKSIDE

Living alienvironment

Come back then and enter a building which houses stores of shield and fuel materials. Getting into the building is easy since the demo mode shows you how to do it.

Although it feels like you're driving a tank, you are actually in a spacesuit and can look up and down. Tilt the angle of perspective, even fire-up your jet pack. The trouble with these movements is that they are

fairly laborious.

Movement forwards and backwards is relatively smooth and fast, sideways movement is very slow and jerky. Considering that only around half of the screen is being used, this is disappointing.

The jet pack activated, take to the sky – or what passes for one – and zoom into the buildings, down the corridors and round the construc-

tions in search of crystals and ECDs.

While some situations are familiar – corridors in buildings and surface features outdoors, for example – some of the features indoors are very strange and infuse a sense of something completely alien. Very unwelcome to the eye. Plus it's difficult to figure out what is what.

The sound effects are goodish, but there aren't enough of them. You'll

soon tire of seeing and hearing the plexar destroying Evath every time you blow your mission impossible.

Nevertheless, Dark Side is a challenging and worthy addition to the Freescape stable. It is slow and thought provoking and will certainly be welcomed by devotees of the 3D arcade adventure. But be warned, it isn't everyone's cup of tea.

Duncan Evans



*That's it. This is the end. There is no more*



HEY AMIGOS GET  
MORE WITH AMIGAS!!

In future advertisements  
Harwoods Hombre will  
feature SPECIAL OFFERS  
or NEW PRODUCTS but  
unfortunately he's got  
no name...

Send us your suggestions and the  
winner will receive  
**A PRIZE OF OUR FIRST  
FEATURED OFFER FREE!!!**

# HARWOODS POWERPLAY

## POWERPLAY PACK 1

Our SUPER VALUE POWERPLAY PACK 1 offers you the chance to buy your Amiga A500 with **ELEVEN GREAT GAMES FREE** to start you off right. Not only that, we also include ABSOLUTELY FREE, a Mouse Mat, TV Modulator and a Tutorial Disk. This adds up to an AMAZING AMIGA SAVING OF £264 !!!

**FREE STARTER PACK**  
 ○ Sword of Sodan ○ Spitting Image  
 ○ Hellbent ○ Strike Force Harrier  
 ○ Power Struggle ○ Winter Olympiad  
 ○ Quadrailion ○ Backlash ○ Bermuda  
 ○ Project ○ Skychase ○ Stargoose  
 ○ Mouse Mat ○ Tutorial Disk  
 ○ TV Modulator **WORTH £264**  
(N.B. Certain games require a joystick)

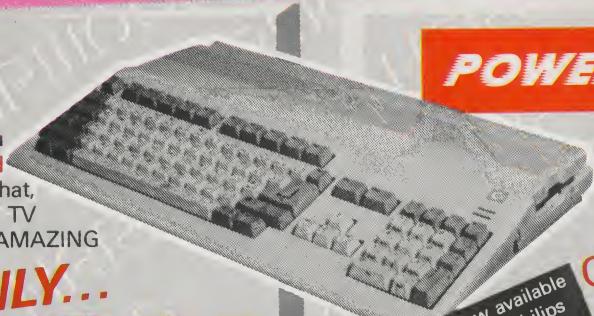
**ONLY...  
£399\***

Or Just £9.99 monthly

**SAVE EVEN MORE WITH  
ONE OF OUR**

**• 4 •**

## POWERPLAY PACK



If you thought Powerplay Pack 1 was good value just look at our Powerplay Pack 2!

**Only  
£599  
NEW LOWER PRICE**

Now available with Philips CM Monitors  
PHONE FOR PRICES!  
PACK 2 contains  
the super "Powerplay Pack 1"  
plus a CBM 1084S colour monitor.

See those games, Hear those games

**WITH ADDED REALITY !**

(N.B. Powerplay Pack 2 doesn't include a TV Modulator)

## GRAPHICS HARDWARE



### MINIGEN

Add computer graphics to your own videos easily!!! Connect to your Amiga's RGB port and domestic video equipment to mix graphics and moving pictures

**MOVIE MAGIC  
AT ONLY**

**£113.85**

### DIGIVIEW GOLD

Digitise static colour images in IFF format at all resolutions from 2 to 4096 Colours up to 640 x 400 Pixels (Requires video camera or video with clear picture pause)

**ONLY £129.95**



## POWERPLAY PACK 3

Take our Powerplay Pack 2 and add (to your choice) a Citizen 120D OR CBM 1230/1250 Printer for that COMPLETE AMIGA HOME ENTERTAINMENT SYSTEM

**only...  
£749**

## POWERPLAY PACK 4

Take our Powerplay Pack 2 and add (to your choice) a Citizen 120D OR CBM 1230/1250 Printer with "The Works" integrated Professional Software instead of Powerplay's games

**WE  
MEAN  
BUSINESS  
AT JUST  
£749**

## ACCESSORIES

### MICROBLASTER JOYSTICK

New, Sturdy, arcade quality, fully microswitched, normal & rapid fire - 12 Mth Warranty

**TAKE CONTROL £12.99**

### ZIPSTICK SUPERPRO'

Professional quality with that "Perfect Feel", autofire 12 Month Warranty

**£18.99**

## — BLANK MEDIA —

**BULK DISKS** (Prices per 10 disks)  
3.5" DS/DD £9.95 - with library case £12.99

### Commodore



The Original Diskette 1000  
High quality brand new media, fully guaranteed  
SUPERB VALUE.  
Box of Ten 3.5" DS  
Only £14.95

## WHY BUY FROM HARWOODS ?

### ORDERING MADE EASY

ORDER BY PHONE-Simply call our 24hr Hotline using your Access/Visa or Lombard Charge Card.

ORDER BY POST-Make cheques, bankers-building society drafts or postal orders payable to GORDON HARWOOD COMPUTERS (N.B. Personal or business cheques require 7 days clearance from date of receipt before despatch)

PAY AT YOUR BANK-If you wish to pay by Credit Giro Transfer at your own bank, phone for details

FREE POSTAL DELIVERY goods in UK Mainland (5-7 day delivery) OR COURIER SERVICE - Add £5 per major item next working day delivery UK Mainland (Orders normally despatched on day of receipt of payment or cheque clearance)

### COMPARE OUR SERVICE

After you've purchased from Harwoods we'll still be here to completely satisfy you should any problems arise.

12 MONTH WARRANTY - If goods prove to be faulty within 30 days of purchase they will be replaced with A NEW UNIT. For the remainder of the Guarantee Period, all warranty repairs will be made FREE OF CHARGE!

COLLECTION FACILITY-Any faulty computer or monitor will be collected from your home FREE OF CHARGE within this Guarantee Period!!!

FULL TESTING PROCEDURE-All computers are thoroughly tested prior to despatch.

### CREDIT TERMS

Gordon Harwood Computers are licensed to amazing brokers and facilities to pay by credit are offered for most items.

12-36 month HP terms are available (subject to status). Just phone us and we will send you details along with an application form. (Applications are required in advance)

Examples quoted are based on 36 months with no deposit.

# WOOD'S PAY Portfolio

**A5+**  
To help us process  
your order, please quote  
this number along with the  
Dept code shown in the address block.



## DATA STORAGE DEVICES

### 30 MEGA BYTE HARD DISK

Real power for your Amiga, connects directly through sidecar expansion bus. Ultra reliable, built in power supply & fan, styled to match your Amiga.

**NEW**

**MEGA STORAGE AT ONLY £399**

includes 12 months replacement warranty FREE, optional 24 months available)

### CUMANA DISK DRIVES

All Cumana drives feature enable/disable switches, 1 meg capacity, compatible with A500, A1000, A2000 and PC1. 2nd drives powered from computer, 3rd drives have internal power supplies. 5.25" drives are 40/80 Track switchable)

**JAX 354-3.5"**

2nd drive

**£99.95**

**JAS 354-3.5"**

3rd drive

**£124.95**

**JAX 1000-5.25"**

2nd drive

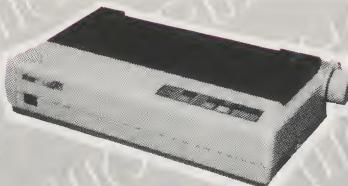
**£129.95**

**JAS 1000-5.25"**

3rd drive

**£139.95**

**SAVE MONEY  
SAVE DATA!**



## PRINTERS

Our range of 9 Pin dot matrix printers include the following features. . . .

Standard centronics parallel port for direct connection to Amiga, PC's, ST, Archimedes etc; Tractor and friction paper feeds.

### CITIZEN 120D FULL 2 YEAR WARRANTY

Very reliable low cost printer, interchangeable interfaces available for RS232 or Serial type for CBM 64 etc.

**£149.95**

### COMMODORE MPS 1230/1250

Both supplied with dual interface, ideal for C64/128/16/+4 or Amiga etc.

**£159.95**

### COMMODORE MPS 1500C

High quality colour printer manufactured by Olivetti, Epson JX 80 compatible

**£199.95**

### STAR LC 10

Multiple font options from front panel, excellent paper handling

**£199.95**

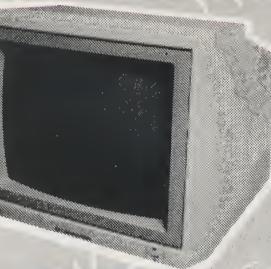
### STAR LC 10C

Colour version of the popular LC 10 allowing the effect of full colour on screen dumps

**£239.95**

## FREE! PRINTER CABLES

To connect to a variety of computers  
(Please state type when ordering)



## MONITORS

### COMMODORE 1084S

Manufactured by Philips, 14" High res. colour, Stereo Speakers, Allows full use of your Amiga's 80 column text display and High Resolution or Multi-Colour Graphics Modes.

**AMAZING  
VALUE  
AT ONLY**

**£229  
NEW LOWER PRICE**

### PHILIPS CM 8833

14" Stereo colour monitor with Green Screen Switch - Better clarity of text.

**SUPER  
SAVER  
AT ONLY**

**£239  
NEW LOWER PRICE**

## FREE LEADS!

1084S - Supplied with leads for Amiga, C64, C128 and standard colour IBM PC compatibles.  
CM 8833 - Please specify your computer for correct FREE connection leads.

## SOFTWARE

### THE WORKS

Integrated w p, mailmerge, spreadsheet, pro database, multicolour graphics

**£79.95**

### AEGIS VIDEO TITLER

for use with Genlocks such as MINIGEN

**£99.95**

### WORKBENCH 1.3

Latest version of Amiga OS with many additional features

**£14.95**

### BBC EMULATOR SOFTWARE

BBC Basic at six times the speed

**£49.95**

## HARDWARE UPGRADE

### COMMODORE A501 RAMPACK

Now you can see those extra features in your software such as enhanced graphics, better sound etc. Extra 512K RAM & Real Time Clock

**£139.95**

**24HR ORDER LINE - 0773 836781**

## VISIT OUR SHOWROOM

Please call and see us; we will be only too pleased to demonstrate the entire range of amazing Amigas and a host of peripherals, accessories and software.

**REMEMBER WE ARE NOT JUST  
ANOTHER MAIL ORDER COMPANY**

All prices are what YOU PAY, and there are NO HIDDEN EXTRAS. VAT & Postage are included and are correct at time of going to press.  
E. & O.E. Offers subject to availability and are currently advertised prices.



**GORDON  
HARWOOD  
HARWOOD  
HARWOOD  
Computers**  
OFFICIAL COMMODORE BUSINESS CENTRE

**GORDON HARWOOD COMPUTERS**  
DEPT A C O : 69-71 HIGH STREET  
ALFRETON : DERBYS : DE5 7DP  
Tel: 0773 836781 Fax: 0773 831040

**W**HY is life never simple? When I bought my Amiga 2000 I specified a hard disc and Workbench 1.3. When it arrived, the disc was already formatted with a Workbench boot disc set-up. The only trouble was that it was installed with Workbench 1.2. As I wanted to use 1.3, the only solution was to start at the beginning, re-format the disc and re-install Workbench.

Commodore, largely because of poor documentation, has a knack of turning simple tasks into epics of trial and error. The Workbench 1.3 manual is an improvement, but you now have to flip between it and the A2090 hard disc controller guide to decide which bits are relevant. Two or three pages in Appendix A of the Workbench 1.3 manual cover hard disc installation after a fashion.

One of the drawbacks of the A2090 hard disc controller and the Fast Filing System (FFS) is that the whole disc cannot be formatted as a FFS disc because the A2090 automatically attempts to mount the first disc partition as an old filing system (OFS). This has been fixed with many of the more recent interfaces such as the Commodore A590.

The solution is to partition the drive into two logical drives, the first of which is formatted as a standard drive, called DH0: the other formatted as an FFS drive. The procedure is quite straightforward, or it would be if you didn't have to dig the information out of two or three different places.

If your hard disc is already formatted and contains any data the first thing you should do is back it up

# Under the Workbench

*Setting up a hard disc can be very confusing as you juggle file systems, formats and manuals. David Foster shows the path to take*

on to floppy because the process of installing the FFS destroys all data.

Understanding the procedure carried out by AmigaDOS to initialise the hard disc for use might make things clearer later on. AmigaDOS automatically mounts the floppy as DFO:, because BindDrivers, one of the command lines in Startup-Sequence, has built in drivers for DFO: and, if a hard disc is present, it attempts to mount a hard drive called DH0: as a standard hard drive.

If you add any further drives, or partition the hard drive into a number of logical drives, you must tell AmigaDOS that you have done so. This is done by making entries in Mountlist and then mounting the drive.

Mountlist is a text file and may be edited with ED, or any ASCII text editor. The layout of the entries

follows certain rules. You will find that sample entries are already included which need altering or duplicating to suit.

Just making entries in Mountlist does nothing and you have to mount the drive with the Mount command, using the name of the drive involved. Mount FS1: would mount the drive defined as FS1: in Mountlist. You can use Mount commands from the CLI, but would normally put them into the Startup-Sequence.

Once mounted, the drive is ready for use, but its icon is not displayed until the drive has been accessed with a command. Just CD and the drive name is sufficient.

Make copies of the Workbench 1.3 disc and HDInstall disc – never use the originals – then switch off and re-boot the computer from the copy of Workbench 1.3. Make a copy of the



Mountlist file in the Devs directory of the Workbench disc with a different name so that if you get things wrong it is only a second's work to copy it over the messed up one and start again. You are now ready to begin the real task.

Insert the copy of HDInstall into the floppy drive and click on the disc icon, then double click on the Install icon to load the program. The first thing you get is a warning about the procedure completely clearing the hard disc of existing data.

**P**LUCK up courage and select Yes to continue. The program will check Mountlist and copy the hard disc driver and other files on to the Workbench disc. There is a final chance to escape just before the program does anything more than copy the necessary files on to the Workbench disc.

You are then asked whether you are using a SCSI hard disc. In most cases the answer is No unless you have specifically requested such a drive and the program then asks whether the first ST506 drive should be Prepped. Answer Yes. The purpose of Prep is to specify the type of drive and its specifications. It must be run to prepare the hard drive.

A list of drive types appears for you to select the one you are using. Things are not always as obvious as they seem. My drive is an Epson ST506 type, but the Epson entry in the list was for a SCSI drive. If you are unsure, check with your dealer. If your drive is not on the list select option 0 for a User Defined drive and answer the questions.

The first few questions are about the drive's specification. If none came with the drive you might have to ring the supplier to check. I did so, to check that mine was, in fact, a bog standard one of the type used by many IBM PC computers, with four heads, 615 cylinders and 17 sectors per track. The required answers to the questions are shown in Figure I.

You are next asked for the last cylinder being used by the first partition of the drive. AmigaDOS takes cylinders 0 and 1 for its own purposes, which means that the lowest cylinder of the first partition starts at 2.

AmigaDOS automatically installs the first partition as DH0: All that Prep needs to know is where the first partition ends. Prep already knows that it starts at cylinder 2. I decided to

```

HardDisk
New CLI task 3
First time hard disk installation.

Warning: this procedure will clear your hard disk.
Your Amiga must be rebooted at the conclusion.
Do you want to continue? [Press RETURN to exit] y

Checking your MountList.

Copying hddisk driver into your Expansion drawer.
RAM DISK:HardDisk/hddisk..copied
RAM DISK:HardDisk/hddisk.info..copied

Copying Prep command into your C directory.
Loading driver

Mounting hard disk and initializing hard disk.
Is this a SCSI hard disk? n
Can't cancel dh0
PREP the first ST-506 drive (DH0:) ? (All info on DH0: will be erased) y
Device RES0: already mounted

PREP Version 33.19

Drive types:

0) USER DEFINED
1) Generic 2 head 10MB (ST506)
2) Generic 4 head 10MB (ST506)
3) Epson HMD-726A (SCSI)
4) MiniScribe 3425/8425 (ST506)
5) MiniScribe 3650 (ST506)
6) MiniScribe 8425S (SCSI)
7) Quantum Q280 (SCSI)
8) Rodine R0 652 (SCSI)
9) Seagate ST225 (ST506)
10) Seagate ST251 (ST506)
11) Seagate ST138N (SCSI)
12) Seagate ST157N (SCSI)
13) Seagate ST225N (SCSI)
14) Seagate ST251N (SCSI)

Select drive type [6]: 0
Number of heads [4]: 4
Number of cylinders : 615
Number of sectors per track [17]: 17
Write pre-comp cylinder [611]: 611

Do you want the heads parked automatically after
3 seconds of inactivity? [Y/N] : N

Last cylinder used by first partition
(range 2 to [default]) [614]: 3

Number of AmigaDOS sector buffers [30]: 30

Would you like to mark any blocks on the disk as bad? [Y/N] : N

Continuing will destroy any information on the
entire physical device, and the system will have to be rebooted.
Do you wish to proceed? [Y/N] : y
PREP complete. Reboot the system before using this drive.
Then Format dh0:

```

Figure I: Installing a cylinder DH0: partition from start to finish

make partition one – DH0: – as small as possible.

The 1.3 manual suggests that you might like to make DH0: large enough to hold the contents of a Workbench disc, primarily so that you can re-boot from the recoverable ram drive RAD: if you have enough memory for all the required files. This process also requires many of the Workbench files to be present on DH0:.

I chose not to make use of this feature, so gave DH0: only two cylinders – 68k, the minimum permitted – and subsequently installed Workbench on the FFS drive.

The final question requires a little explanation. Often when a hard disc is produced parts are not quite up to standard. You need to tell the program where they are so that those parts of the disc can be marked unavailable. There is usually a list stuck to the disc.

You have a final opportunity to abort the procedure, or continue to Prep the disc. Prep creates the device

RES0: which consists of tracks 0 and 1, used by AmigaDOS for its own purposes and not available to you.

If you make changes to the settings in Mountlist for the device RES0: you must re-run Prep before you can mount or format the hard disc successfully.

Now re-boot the computer again, load Mountlist into a text editor and check that the entries for RES0: are correct. Check that the Unit entry is 1 for a first hard drive of the ST-506 type and that Surfaces – the number of heads – and BlocksPerTrack match those for your drive. Don't make any other changes but check that LowCyl and HighCyl are 0 and 1 respectively.

Look through the Mountlist file; you should find an example entry for a device called FAST: You can change its name to anything you want. I chose FS1:.

The majority of the entries should be the same as those for RES0:, but you must change the LowCyl and

## Check your software installation

Two types of drive are commonly used with the Amiga. SCSI and ST506 types may both be used with the Amiga 2090 and 2090A controllers, but only the ST506 drives are normally supplied by Commodore. This is not true of some third party supplies, so check which you have before setting up. It is assumed in this article that you will be installing an ST506 drive. The software installation is essentially the same for both types, with the following differences:

ST506	SCSI	Description
RES0:	RES2:	Device name for cylinders 0 and 1, used by AmigaDos
Unit=1	Unit=3	Used in MountList RES0: and FFS partition definitions.
DH0:	DH2:	Drive name for first partition of first hard drive.

Further partitions may be called whatever name you choose to give them in Mountlist.

HighCyl values to suit the size of your partitions. In my case, as DH0: is using cylinders 2 and 3, the entry for LowCyl needed changing to 4 and HighCyl to 611, as I wanted to use the rest of the drive as one partition.

If you want more than one partition in addition to DH0:, set HighCyl to the value you want for the top of the first FFS partition, then copy the whole entry for FAST: and change LowCyl for the new entry to start at the next higher cylinder and the top with the highest cylinder you want and so on until you have created the number of partitions you want and used up all the cylinder. Don't forget to give the second entry a different name from the first, by changing FAST: to something else, say FS2:

Mountlist can then be saved and it is time to format the different partitions. This can only be done from the CLI. DH0: will have been mounted automatically when you rebooted the computer, so you can just type:

```
FORMAT DRIVE DH0: NAME MyName
```

Once DH0: is formatted it is time to format the other partitions. Before you can do this you must mount each drive. Enter:

```
MOUNT FS1:
```

or whatever description you gave the entry in Mountlist, and follow this with:

```
FORMAT DRIVE FS1: NAME MyName2 FFS
```

Don't forget to add the FFS to the end of the command this time, so that

the partition will be formatted as a FastFileSystem drive. Repeat the procedure of mounting and formatting for any further partitions you have created.

You are almost finished now, and you should find that if you type:

```
CD FS1:
```

the new drive responds to other commands such as Info or Dir. If everything is OK make changes to Startup-Sequence so the new drives will automatically be mounted every time you boot the computer.

Now copy the Workbench files from floppy to your hard disc as some of them will be required when you boot up.

In the S directory of your floppy you will find a file called Startup-Sequence.hd. This is the one you need, and its name must be changed to Startup-Sequence. Delete the original Startup-Sequence file on the floppy as you won't need it again and rename Startup-Sequence.hd to Startup-Sequence.

Load the new Startup-Sequence file into ED and find the BindDrivers command. Insert lines after BindDrivers, the new Mount commands for each partition – except the first – DH0:. Further down the file you will see a line assigning SYS to DH0:. You should change DH0: to the name you have given the drive partition which now contains Workbench.

Save the file and you will then be able to reset the computer and boot from the floppy drive. You can make improvements by editing the Startup-Sequence files on the floppy and hard discs.

Startup-Sequence on the floppy uses an Assign >NIL: DH0: EXISTS line. This checks to see whether the drive is present. We know it is, so comment out the line with a semi-colon and also the If Not Warn line and all the lines from and including Else to the end of the file.

Now load the Startup-Sequence file on the hard disc and comment out the BindDrivers line, as the command has already been issued from the floppy disc. You might as well change the SYS:System/SetMap usa1 line to read SYS:System/SetMap gb, so that the keys do what you expect.

As a little extra bonus, I also include the following line immediately before the EndCLI line at the end of the file:

```
NewShell "NEWCON:440/150/200/50/Shell"
```

This provides a small CLI window in the lower right corner of the screen, on top of the Workbench screen, so that I can either use the mouse or issue CLI commands directly from the small window.

## Guide to setting up

1. Back up any existing data on the hard disc to floppy, for possible later restoration.
2. Make working copies of Workbench 1.3 and HDInstall discs.
3. Run the Install program, found on the HDInstall disc.
  - a). Select option 0 from the list of hard drives.
  - b). Answer questions about number of heads, cylinders, and so on, according to the drive you are using.
  - c). Specify last cylinder number of first partition.
  - d). Select default for AmigaDos buffers.
  - e). Mark bad blocks, if any.
  - f). Complete Install procedure.
4. Re-boot computer.
5. Check Mountlist file for correct entries and adjust to suit your drive if necessary. Add new entries for partitions.
6. Format DH0:
7. Mount and format each further drive partition, according to the names you gave them.
8. Copy required files on to hard drive.
9. Alter Startup-Sequence as necessary.



# THE AMIGA SPECIALIST

## HARD DISK AMIGA A500/A1000/A2000

20 MBYTE HARD DISK .....	£369.00
40 MBYTE HARD DISK .....	£499.00
60 MBYTE HARD DISK .....	£649.00

(state model, supplied with software)

## MIDI INTERFACE AMIGA

— For A500/A1000/A2000 (state model) £24.95  
 — Midi in, midi out, midi thru  
 software incl.

## X COPY £19.95

- No. 1 Copy Program – Parameter copy
- Backs up commercial software
- Update service

## HARD PLASTIC DUST COVERS

A500/A1000/A2000	£7.99
Mousepads (top quality)	£4.99
Diskbox 3.5" (80) with lock	£7.99
Diskbox 5.25" (100) with lock	£7.99
White Label 3.5" DSDD (10) disks	£7.99
Printer cable (top quality)	£4.99
Scart cable (top quality)	£9.99

## AMIGA DISK DRIVES

3.5" EXTERNAL DISK DRIVE	£75.00
DSDD SLIMLINE DRIVE	£89.95
WITH TRACK DISPLAY	
5.25" EXTERNAL DISK DRIVE	£89.95
40/80 TRACKS IBM COMPATIBLE	£104.95
WITH TRACK DISPLAY	
3.5" INTERNAL DISK DRIVE	£69.95
A2000	

ALL DRIVES  
 ON/OFF SWITCH AND  
 THROUGH PORT

## AMIGA SUPER CARD

- NEW!!! £99.95**
- Kickstart 1.3
  - Anti Virus
  - Floppy Speeder
  - Boot Drive Selector
  - Copy Program
  - Functions under F-Keys
  - Mouse Driven
  - Error Messages
  - Shortened Reset
  - Extra Utilities

## GENLOCK A500 MINIGEN

**£99.95**  
 — PROFESSIONAL GENLOCK A500  
 — Low cost, enabling you to merge computer graphics with live video & record the results on a VCR

## RENDALE

**GENLOCK A500 £199.95**  
**GENLOCK A2000 £199.95**

## NEW – VIRUS PROTECTOR

- £24.95**
- Hardware and software
  - Place hardware between external drive and computer
  - Protects internal and external drives
  - Always present after warm reboot
  - Gives alarm signal if a virus is found
  - Protects against 16 Viruses

SPECIAL OFFER

## RAM EXPANSIONS

### A500 512K

- Upgrade to 1 mbyte, fitted in seconds
- With clock, battery operated to retain time/date

### A500 1.8MByte (512k Ram)

- Board to add 1.8 Mb internal memory to your A500

With Ram 1.8 MByte

**£89.95**  
 While stocks last

**£149.95**

**£399.00**

### A500/A1000 2MByte

- 2 Mb ram expansion A500/A1000
- simply plugs into expansion port

**£425.00**

### A2000 2MByte

- 8 Mb board, 2Mb Ram

**£449.00**

Digiview Gold Video Digitiser £99.95

A1000 Kickstart 1.3 + Clock £149.95

Eeprom Programmer £99.95

Boot Selector (Boot from DF1s) £9.99



# 512K RAM EXPANSION FOR THE A500

The image features a large, bold, black question mark with a white circular center. The question mark is oriented vertically and is positioned in front of a background that contains a repeating pattern of text. The text discusses the 512k card from Memory Expansion Systems, highlighting its cost-effectiveness, high capacity, and compatibility with the Amiga 500. It also mentions the inclusion of an 'on/off' switch and a useful expansion memory feature. The background text is partially obscured by the large question mark.

**99 cent**

The latest computer expansion systems is probably the easiest way to expand your A500. M.E.S. have used the latest technology to help keep costs down without compromising quality. The card plugs into the expansion slot underneath the keyboard, and features a useful expansion memory 'on/off' switch. The 512k card from memory expansion systems is probably the cheapest way to



# Out of control

*Steve Rackley looks at Project Master and comes up with a cheaper solution*

DURING idle moments I've often wondered about the usefulness of management tools. Do they serve a purpose beyond keeping managers busy and giving them something to justify expensive hardware on their desks?

Project Master splits a job into stages. You give the system your estimates as to how long each step will take. You then add estimates for the cost of each step and the resources needed. Some steps may be concurrent, so that if you have sufficient resources the steps can be carried out simultaneously.

The system calculates total time taken, total costs and resources. It can also calculate critical paths, the tasks which *must* be finished before the project as a whole can proceed any further.

Then by entering real data as it becomes available, for example how long a step took or how much a certain resource actually cost – often nothing like the estimate – the system updates its totals and revises the overall timescale to take account of late or early (ha ha!) completion of

the tasks. It's this copious re-entry of data that makes a project management system's data entry facilities so critical.

Project Master's features include the ability to produce time, cost and resource charts giving a graphical representation of the duration and cost of each task, with statistics such as critical and maximum paths, progress and cumulative costs including percentages of estimates.

INITIAL data entry is laborious; keeping everything up to date is almost as bad. Project Master works happily with incomplete data, giving you as much information as it can from the input provided, but that is no excuse for the poor design of the data entry stage.

Charts can be printed and plain reports produced. Resource charts are an easy way to highlight idle resources or show up overlap caused by allocating the same workers to two concurrent tasks. Project Master doesn't warn of this sort of thing automatically – it allowed me to

allocate one person to three concurrent tasks, spending all of his working week on each of them.

Compared to similar offerings on the PC, Project Master doesn't seem to offer anything special, but does lack some features found on more expensive products, such as the ability to specify the extent of a resource's availability.

I'm not a project manager, but I know a man who is. In his opinion perhaps the single most important feature of his expensive PC software is its ability to set up a "resource pool", which is independent from any project and includes individual calendars.

When holidays are booked, they are entered and reflected in all future calculations. The lack of such features relegates Project Master to the amateur scale, which in turn casts doubt upon its entire worth.

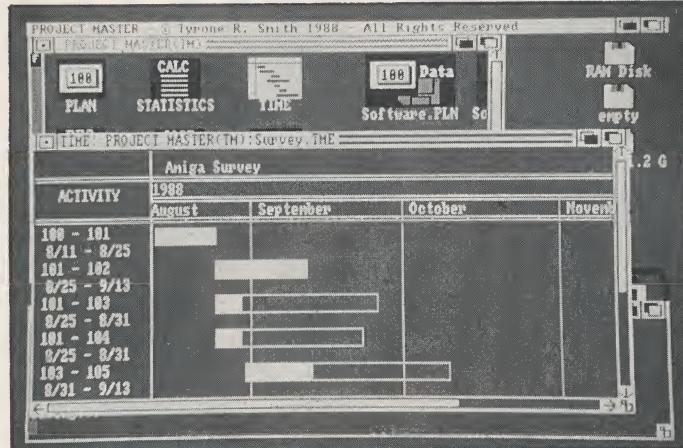
I work in a large office where several software projects are always under way at once. Although most of the managers have tried tools such as

this, they generally give up on them as being more trouble than they're worth. An exception is one colleague who is using a package costing around £1,000 to control several large interrelated projects involving dozens of people and other factors over a two-year period. I'd hate to try that with Project Master.

If this kind of software is to earn its keep, it has to be easy to use. I'm

afraid Project Master just isn't, although it seems so at first sight. It's very well presented, it multi-tasks beautifully, and it is fairly well documented. But this type of software stands or falls on its ease of input. Project Master fails. Dates must be input with separating hyphens.

Rates of pay can only be given as a whole number of pounds or dollars per hour, which could give some pretty large discrepancies on a major



The lack of powerful features relegates Project Master to the amateur scale, which in turn casts doubt upon its entire worth

project. I found that going back to look at a previous task in the middle of entering a new one lost half the data in the new task.

I've got a better project management aid. It's called pencil and paper.

## REPORT CARD

**Project Master**  
Brown Wagh 0101 408 395 3838  
\$195

**EASE OF USE** ..... [Bar chart with 10 segments, mostly empty]  
Input is of great importance, and it just isn't up to a professional standard.

**SPEED** ..... [Bar chart with 10 segments, mostly empty]  
Really needs a hard disc. Hardly the software's fault, but still relevant.

**VALUE** ..... [Bar chart with 10 segments, mostly empty]  
As these things go, it's reasonably priced, but its quality reflects this.

**OVERALL** **39%**

While any attempt to produce Amiga software aimed at corporates is laudable, this is a disappointment.

## DISCOUNT SOFTWARE FOR THE AMIGA

### GAMES:

Archipelagos	£16.95
Balance of Power 1990	£17.95
Blood Money	£16.95
Colossus Chess	£16.95
Dragon Ninja	£18.95
Galdregons Domain	£13.95
Gunship	£16.95
Hawkeye	£13.95
Kick Off	£13.95
Lancelot	£14.95
Lombard RAC Rally	£15.95
Lords of the Rising Sun	£19.95
Millenium 2.2	£18.95
Populus	£18.95
Running Man	£18.95
S.D.I.	£18.95
Super Hang On	£16.95
Test Drive 2 - The Duel	£18.95
War in Middle Earth	£15.95

### BOOKS:

Elementary Amiga Basic	£14.95
Kickstart Guide	£12.95
Amiga Tricks & Tips	£12.95
Advanced Amiga Basic	£16.95
Amiga for Beginners	£10.95
Amiga Machine Language	£12.95
Amiga Microsoft Basic	£18.45
Basic Inside & Out	£18.95
The C Language	£23.95

**PHILIPS COLOUR MONITOR CM8833**  
with stereo sound  
**OUR PRICE £229.95**

### WORD PROCESSING:

Protex V4.2 Latest Version	£64.95
Kind Words 2	£39.95
Microtext	£15.95

### SPREADSHEETS:

Home Accounts (by Digita)	£20.95
Digicalc	£26.95
KSpread II	£49.95
Maxiplan 500	£89.95
Personal Tax Planner	£29.95

### GRAPHICS:

Deluxe Paint 3	£59.95
Digi Paint	£41.95
Photon Paint 2	£68.95

### PROGRAMMING:

Hisoft Basic (includes extra book)	£59.95
Hisoft Devpac V.2	£39.95
K-Seka	£34.95
Metacomo Pascal	£68.95

### DATABASES:

K Data	£34.95
Microbase	£15.95
Omega file	£18.95

Amas Midi/Sampler	£74.95
Adrum	£29.95
Aegis Sonix	£44.95

### EDUCATIONAL:

each has 8 games	
Fun School 2 2-6 years	£13.95
Fun School 2 6-8 years	£13.95
Fun School 2 8-12 years	£13.95

### ACCESSORIES:

Mouse Mat	£3.95
Amiga Keyboard Cover	£3.95
Amiga to Centronics Printer Lead	£6.95
Quickshot Turbo Joystick	£10.95
3.5 Head Cleaner	£5.95
Comp Pro 5000 Joystick	£12.95
A500 Ram Expansion (inc. Clock)	£139.95

### PRINTERS:

All printers listed have a ten inch (A4) carriage, are Epson compatible, and feature friction and tractor feed mechanisms for continuous or single sheet paper. All prices include the necessary cable

**PANASONIC KXP-1081** **New Low Price**  
Offers all the draft mode text sizes of the Epson FX compatibles and offers N.L.Q. in all sizes and effects. Well built, very reliable, highly recommended ..... £159.95

**STAR LC-10**  
As well built and reliable as the Panasonic. Has four N.L.Q. fonts (typefaces), in combination with all sizes and effects. New low prices makes it well worth considering £195.95

**STAR LC-10 COLOUR**  
All the features of the LC-10, but with a seven colour option. Uses the Epson JX80 printer driver from Workbench + others ..... £249.95

**STAR LC 24-10**  
24 pin version of the LC-10. Has 5 excellent letter quality fonts available with all sizes and effects. Two extra effects, outline and shadow are also featured. Good value ..... £339.95

### DISCS:

Bulk 3.5 Discs 10 off	£9.95
Bulk 3.5 Discs 20 off	£18.95
Sony Branded Box of 10	£15.95

All goods offered subject to availability. All prices include VAT & Delivery. Overseas orders welcome. Please write for prices.

Callers welcome: Monday to Friday 9.30 to 5.00. Saturday 10.00 to 4.00. Please send cheques/POs to:

Proprietor: M. J. Cooper



**M.J.C. SUPPLIES (AMG)**

40a QUEEN STREET, HITCHIN, HERTS. SG4 9TS

Tel: (0426) 421415/32897/420874 for Enquiries/Credit Card Orders



Amstrad  
9.95 (t)  
Iso: A  
'C vers

Learning has never  
been such fun!

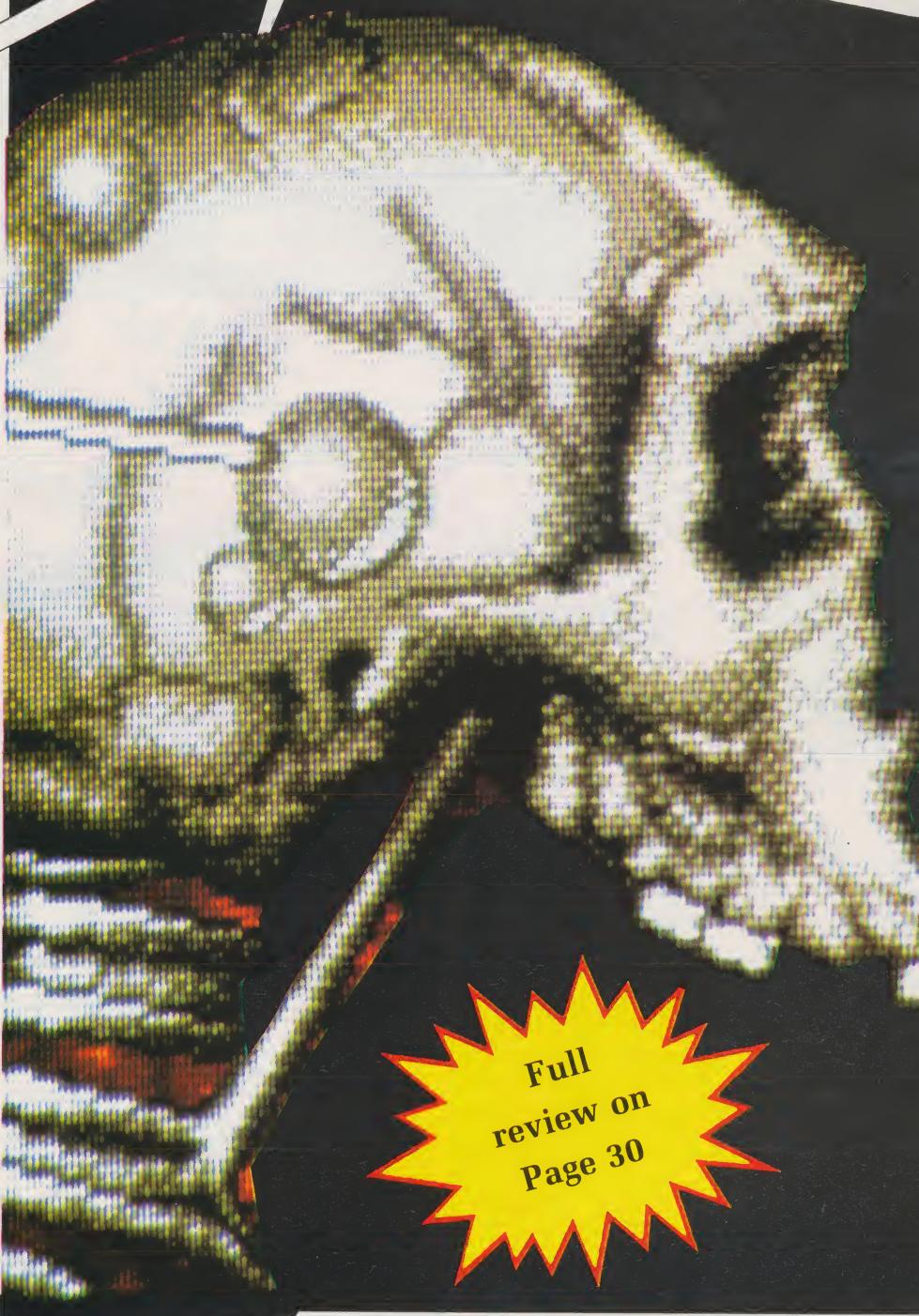
# fun school

## Fun School 2 for Over-8s contains:

- Build a Bridge:** Shape-fitting challenge
- Passage of Guardians:** Enjoy anagrams
- Unicorn:** First steps in problem solving
- Logic Doors:** Mapping made easy
- Souvenirs:** An introduction to travel
- Code Boxes:** Discover binary arithmetic
- Mystery machine:** Have fun breaking codes
- Escape:** A final check on progress

# What you'll find on our

TRAINED



Full  
review on  
Page 30

DIGITAL Magic Software has pulled off a real coup! If you first two games releases have won Amiga Computing Excellence awards. And when we first saw Train Assassin, we knew we wanted this game for our debut cover disc.

The folks at Digital Magic chose to give you level four, the Chasm the disc. It's got flying eyeballs, leaping protozoa

To load *Trained Assassin*, switch on your Amiga, pop the cover disc into DF0; wait a few seconds for the Workbench then double click on the CD001 icon. When the window has opened, double click on the Trained Assassin icon.

and tracker tumours – a lev not for the weak of stomach. Even our most hardened games reviewer almost lo his lunch.

Shoot the eyeballs for points before they jump out of their sockets. Pick up the extra weapons, but watch out for the relentless scrolling – you might get squashed.

As a budding assassin you need to know how to make the most of the weapons. This attract mode screen describes some of them. It also advises you to press Help for extra descriptions. Don't bother, the second page isn't included in this version.

All the weapons autofire. There is no need to set th

witch c  
old do  
You ca  
this is  
ire. Re  
trigger  
ound a  
direction  
ome o  
weapons  
acing

you ha  
plugged

WH

THE t  
one  
Assas  
hour  
play a  
We've

So  
you'll  
mindl  
scored  
play t  
mail o  
to sto  
version

And  
for A  
reader  
fiver  
price,  
can p  
qualit  
£20. C  
for ful

# Your first cover disc

switch on your joystick, just hold down the fire button. You can't turn and shoot. This is so you can flee and fire.

Remember to let go of the trigger if you want to flip round or shoot in another direction. Once you have some of the more powerful weapons, the way you are facing becomes very important.

If you need to take a trip to the bathroom or rest an aching index finger, hit the Del key to pause. If you are doing so badly you are ashamed of the score, press Esc to quit.

*Because of the way the program has been compressed to save space on the disc, you may have problems loading it on an unexpanded 512k machine if you have a second drive plugged in or if you have run another program first. The remedy is simple: Switch off, unplug any memory hungry peripherals, switch on and try again.*

## THE WHOLE GAME

THE trouble with playing one level of Trained Assassin is that half-an-hour later you want to play another. Don't panic! We've thought of that.

So sure are we that you'll want more of this mindless mayhem which scored 15/15 for gameplay that we've got our mail order boys and girls to stock up on the full version.

And as a special treat for *Amiga Computing* readers, we're knocking a fiver off the retail price, which means you can pick up this coin-op quality game for under £20. Check out Page 52 for full details.

DiskSalv is run from a CLI or Shell and in the simplest case is used very much like DiskCopy.



# DiskSalv

DISKSALV is a program designed by Dave Haynie of Commodore US to salvage any files and directories from a damaged AmigaDos file system device – hard or floppy – to a good one.

This is version 1.40 – the very latest update which works with the AmigaDos Fast File System (FFS). It fixes all the bugs found in previous versions.

To recover files from a bad disc in DF0: and restore them to a good disk in DF1: you would type:

```
disksalv FROM df0: TO df1:
```

The FROM and TO keywords are optional if the input and output devices are kept in that order. In use, DiskSalv will immediately print to the screen the detail shown in Figure I.

At this point, pressing Return will start the recovery process, pressing N followed

```
DiskSalv V1.40 Copyright (c) 1989 by Dave Haynie
```

```
Salvage FROM Device DF0: TO Path DF1:
```

DEVICE	=	trackdisk.device	(DF0:)	
UNIT	=	0	FLAGS	= 0
HEADS	=	2	SECTORS	= 11
LOCYL	=	0	HICYL	= 79
LOBLOCK	=	0	HIBLOCK	= 1759
RESERVED	=	2	MEMTYPE	= 3
ROOT BLOCK	=	880	DISK SIZE	= 1760

```
Scan Range: START 2, STOP 1759, Expecting Standard FileSystem
```

```
Should I continue [Y]
```

Figure I: The first step to a healthy disc

by Return will abort.

There are quite a few options in DiskSalv that will modify in various ways the recovery action, including ASK, which allows the disc salvage to proceed interactively instead of automatically. You will be prompted at each file or directory.

Entering Y will recover that file or move into that directory. A reply of N will skip that item. Replying ? will list all the valid options.

Typing A will recover everything left at the current directory level, U will skip everything left at the current directory level and Q will quit the program completely.

Full details of the program, the options and the error messages are included on the disc in the file Disk-Salv.doc. Double-click on the icon and read the documentation before using the program for the first time.

● IF you are not a subscriber and your disc does not work, please send it to: *Direct Disc Supplies Ltd, Dept Amiga Computing, Unit 19, Teddington Business Park, Station Road, Teddington, TW11 9BQ*. You will be sent a new disc.

● IF you subscribe to *Amiga Computing* and your disc has been damaged in the post, please send it to: *Database Direct, Amiga Cover Disc, FREEPOST, Ellesmere Port, South Wirral L65 3EB*. You will be sent a new disc.

● IF you damage your disc – for instance if the dog has chewed it or your mum has washed it – you can get a new one by sending £1.50 to: *Direct Disc Supplies Ltd* making your cheque or postal order payable to Direct Disc Supplies Ltd.

Now turn to next page

# What you'll find on our first cover disc

ONE of the most addictive games ever released on 8 bit machines was Thrust. Fancy graphics were sacrificed to make room for the best gameplay this side of Tetris. Many an addict found himself playing through the night, battling bravely against the seemingly impossible forces of gravity and strategically placed gun emplacements.

Imagine a 16 bit game with that sort of playability but with great graphics as well. Raider is that game.

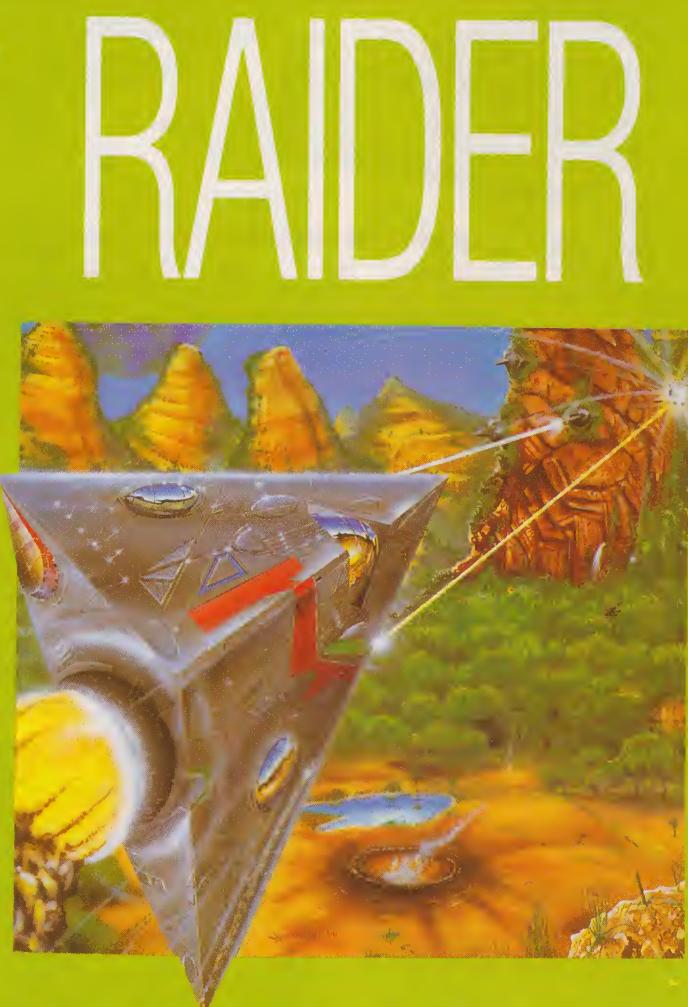
To load: *Raider* boot up the cover disc, open CD001 and double-click on the Raider icon.

You can re-define the playing keys to use either joystick or mouse. Don't bother, the keyboard is the only sensible way to play. The default keys are:

Thrust	Right shift
Fire	Return
Shield/tractor	Spacebar
Rotate left	Z
Rotate right	X
Pause	P

If those don't suit, you can re-define the keys to your favourites. Don't worry about Vis, the visibility torch, you won't need it until you buy the whole game.

Press P at the re-define screen to enter a password



and go straight to the more difficult second level. We'll leave you to discover the identity of that four letter word for yourselves.

As you use thrust, your fuel decreases. The amount you have on board is shown

at bottom left, the upper of the two counters. Extra fuel can be gained by picking up the blue capsules with your tractor beam. This is directional - you do not have to be exactly over a capsule to grab it. A warning siren will

sound when you are low on fuel.

On the right-hand side of the status panel, the middle light (green) remains lit for as long as fuel capsules are available on the current planet.

The bottom, orange light remains lit while the end-of-level bonus is still available.

If you successfully complete the first level the password to the second will be given to you.

The mission consists of collecting green cogs which are hidden from you at the start of each level by a cunning cloaking device.

Let gravity do all the work - only use fuel when you have to. You should rarely have to thrust downwards.

Don't shoot the fuel capsules, but blast away at everything else - ammo is free. Be careful not to get too close to something you are shooting. You will die if you are caught in the explosion.

To shoot a difficult gun emplacement, drift into its line with your shield on and blast away.

Once you have blasted all the bases, the top light of the three - blue - will be lit letting you know that the cog's cloaking device has been deactivated.

You must hunt down the cog, collect it with your tractor beam and thrust away from the planet to finish the level. Pressing Esc in pause

DO you often copy software on to floppies to take home from work or for archival purposes? Every once in a while, do you find that something has been written incorrectly to disc? Are you sick and tired of this? You are? Then you need DiskChecker.

This program, based on DiskSalv and written by C. Harald Koch of Toronto earlier this year, will read every sector on a hard or floppy disc, reporting any read

## DiskChecker

errors found. To check a disc type:

### DISKCHECKER

This program runs from a CLI or Shell. To check a disc type: DiskChecker [option] <device-name> where *device-name* is the name of a disc device - DFO:, FFO:, DH0:, RAD:, and so on.

DiskChecker will print statistics about the device and then read through each sector on the disc. It will report any errors encountered by error number.

In addition, if the error is a valid Trackdisk.Device error, the program will print a descriptive error message.

There are two options: -q (a hyphen followed by lower

case Q) performs the check quietly and only reports errors encountered.

The second option, -v (a hyphen followed by lowercase V) performs the check verbosely displaying data about every sector checked. So to check a disc quietly in the internal drive, type:

```
diskchecker -q df0:
```

The program will abort if



# AMIGA COVER DISC

## Win up to £1,000 !

mode aborts the mission. Now stop reading this and go and have some fun.

*Because of the special compression technique used to squeeze more of the game on to the disc, A500 owners with no extra memory may experience difficulties running it if a second disc drive is fitted or if another program has been run before Raider. If the program hangs with a blank screen remove the disc, switch off, wait 20 seconds and try again.*

### THE WHOLE GAME

After completing this demonstration version of Raider, you'll want to get your hands on the real thing - the other 38 levels which scored 15/15 for graphics and caused our reviewer to comment: "The graphics used to define the various planets and moons are wonderfully drawn and smoothly scrolled in all directions. Every new landscape is a joy to look at and explore".

Never fear, mail order is here. Turn to page 52 to read full details of how to get hold of Raider for just £14.95.

you type Ctrl-C or Ctrl-D.

DiskChecker tries to make certain sanity checks about devices. It will not let you check CON:, for example.

However, these checks are far from perfect. You will crash your machine if you try to check SER:, PAR: or PRT:. Make sure the device statistics printed look reasonable before proceeding.

DiskChecker does what it says, and will only check discs, not Amiga devices.

We are looking for original contributions for the *Amiga Computing* cover disc. If you think something you have written or drawn is good enough to share with everybody else who reads the magazine, send it along and we will have a look. If we like what we see, it could earn you up to £1,000.

Please let us know if your submission needs any files from the Workbench disc. Programs which use the Amiga's built-in speech can be particularly greedy in this respect.

If your program is clickable from Workbench, feel free to design an original icon. In fact, we'll pay small amounts for good icons, even if there is

no program attached. But don't make them too big. And please use the standard Workbench colours.

Bear in mind that a program which does not run on a 512k machine would have to be exceptionally good to make it on to the disc.

Please enclose this coupon, or a photocopy of it, with your submission. Include a file on the disc with full documentation, your name, address, phone number and a few details about you and your kit. Don't forget to duplicate on the disc label the program name, your name, address and phone number. If you want your disc back, enclose the correct amount in stamps.

Name..... Age..... years

Address.....

.....

Daytime phone ..... after....am

Evening phone ..... after....pm

Submission name.....

Submission size..... bytes in total

NOTE: We will accept submissions up to 500k in total length, including documentation. But the shorter your submission, the better chance it stands of getting on to the disc. If it is a compiled program, include all the source code, but do not count this in the size of the submission.

Write a brief description of your submission below. If it consists of more than one file, describe what each file is for. Attach an extra sheet of paper to this form if necessary:

.....  
.....  
.....  
.....

#### Sign this declaration:

The stuff on this disc is mine. I didn't nick it off someone else. It hasn't been published before and I haven't submitted it elsewhere because I want *Amiga Computing* to publish it.

Signed..... Date.....

Post your submission to: Jeff Walker, *Amiga Computing*, North House, 78-84 Ongar Road, Brentwood, CM15 9BG.



# Disc bargains!

Send for the full version of the great games on this month's Amiga Computing cover disc – and **SAVE £10!**

**SAVE £5**



## Trained Assassin

This blockbuster combines the best features of some of the most popular games ever to have appeared on the Amiga.

It features five action-packed levels with different varieties of scrolling and gameplay, with the fifth level guaranteed to raise your joystick's temperature by a few degrees (if not your own).

"*Trained Assassin* is of a standard that could probably survive unaltered in a real arcade – few games could manage that." –

Stewart Russell,  
*Amiga Computing*.

RRP £24.95  
Our Price  
**£19.95**

**SAVE £5**



## Raider

Skill and determination are the qualities you'll need in vast amounts if you're going to fully master this game.

Your mission consists of collecting pods by hovering above them and switching on your tractor beam, but all the time you have to take into account the effects of inertia and gravity, controlling your ship as smoothly as possible – to avoid colliding with the planet below.

"The graphics are wonderfully drawn and smoothly scrolled in all directions. Every landscape is a joy to look at and explore... delicate, addictive gameplay." – John Kennedy,  
*Amiga Computing*.

RRP £19.95  
Our Price  
**£14.95**

**TO ORDER  
PLEASE USE  
THE FORM  
ON PAGE 95**

S!

0!

ed  
in

the best  
car games  
Amiga.

vels with  
olling and  
aranteed  
ture by a  
our own).

dard that  
in a real

£24.95  
r Price  
9.95

er

qualities  
if you're  
is game.

ollecting  
hem and  
or beam,  
e to take  
f intertia  
our ship  
to avoid  
it below.

nderfully  
led in all  
scape is a

£19.95  
Price  
4.95

# Money for nothing

*Pssst, want a free plug for your PD club? Fat Angus's fourth floor office is the best place to find one*

**M**Y guru is busy meditating but while he was away doing grinding-halts to my machine I received a package from a cheeky chap who reckons he can find his way into *Amiga Computing* on the merits of his work. A cunning ploy to slip past the armed guard in the lobby, abseil up the stairwell and arrive at Angus's linen cupboard in the fourth floor washroom.

David French, or David French Software as he prefers to be known, is one of the growing band of speedboat drivers who realise that at the age of 13 there is more to life than modelling life jackets.

Swapping throttle and surf for Amiga and mouse, he's tied up his powerboat and left the swell of the ocean for the smell of the keyboard. Not content with sending me discs which make good drinks coasters, he sent me a swatch of newsletters wrought from his own fair nine pins.

Taking the discs in reverse order (scsid eht) there's a collection of virus killers, including the very useful VirusX and the pretty but not too delicate Blizzard. With the Prat Quotient on the increase, it's not enough to set the write-protect tab on the disc. Everyone *must* have some sort of virus protection.

The disc autoboots to a choice screen. It's here that I may fall out with young French. He's included that damn awful progette that makes the screen undulate as if you're looking through rippling water. It's OK for a minute or so but there's no room for it on a serious collection of

virus fettlers.

The second disc is a collection of PD utilities, 600k of them trawled from other discs and assembled as a sort of general purpose disc dabbler's toolkit.

Hiding on the third and penultimate coaster is a wee beastie by the name of Diskmaker. Frenchie describes this as "a minor utility by myself that runs from Dos and prepares discs for booting". At present this only works for rich people, but a version for single drives is imminent.

The final disc will have to wait until another day for its international debut because I've used one hot cup too many on it and it's gone to that great random access in the sky. The newsletters are informative hints and tips written in a zingy and easy to read style. Their style and content leads me to believe that we'll be hearing more from David French.

**M**ARTIN at 17 Bit must get Angus's award for turning out the largest amount of quality PD the quickest. I can't remember whether I've burbled about 17 Bit Disc 323 before, but even if I have,



it's got to be worth another paragraph.

Remember when digitised music first appeared on the Amiga and we all went Pheeeeewwww corrffff bl\*\*\*\*\* h\*\*\*\* and all that? Nowadays it all sounds similar, uses the same samples and has that infuriating electronic drumkit that Kraftwerk threw out in the 'seventies.

17 Bit 323 uses all those predictable digitised delights that are apt to make us yawn but young Sixsmith, the Programmer/Compiler, has welded them together in a rather pleasant six minute rendition of something by Vangelis. The accompanying slideshow is simple but effective. The overall effect is slightly stunning.

Arghhhh, I've done it again. Slightly stunning. As you read this, think of the poor old sub editor, whose job it is to remove nonsensical drivel such as "slightly stunning" from this article. I'm sure that as he

# Lancelot



Travel back to the Age of Chivalry when knights were bold, galloping across the countryside and rescuing damsels in distress.

Level 9 recreate the time of wizards and the Knights of the Round Table in their greatest adventure yet. Lancelot consists of three interlinked adventures, spanning the complete saga from the foundation of the Order to its finest hour – the quest for the Holy Grail.

Guide Lancelot through his many exploits at Camelot, battle with wayward knights, and win the love of Guinevere and Elaine.

The challenge which has fascinated treasure hunters through the centuries is now yours – and you'll need all your strength, wit and valour to achieve your goal.

Inside every box there's a detailed guide to playing Level 9 adventures, a background story to the classic legend, a parchment map of Arthurian England – and full details of how to take part in the Quest for the Holy Grail competition.

**MANDARIN**  
SOFTWARE

**Level 9**

Please send me the following Lancelot (tick the format you require):

£14.95	Tape	Disc
Atari XL/XE	7063 *	7065 *
Amstrad CPC	6171 *	
Apple II		1052 *
BBC Master		2192
Commodore 64	9003 *	9004
MSX 64k	9093 *	
Spectrum	9091 *	

\* Text only

Dealers: Ring Diane O'Brien on 0625 878888 for your free Mandarin Software information pack

£19.95	Disc
Atari ST	9155
Commodore Amiga	9522
Amstrad CPC/PCW/ Spectrum Plus 3	6172
IBM PC and Compatibles	5724
Macintosh	1053

Tape versions come  
with three cassettes  
in every package

I enclose a cheque for £.....(including VAT and p&p) made payable to Mandarin Software

Please debit my Access/Visa card no:

\_\_\_\_\_

Expiry date: \_\_\_\_\_

Signature: .....

Name: .....

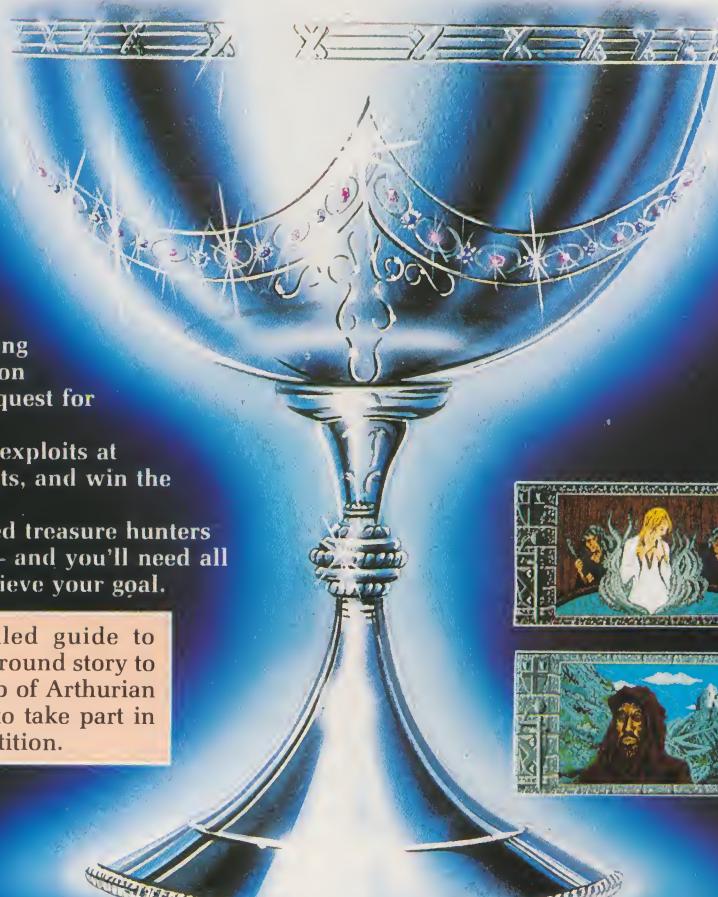
Address: .....

..... Postcode .....

**SEND TO:**

Database Direct, Freepost, Ellesmere Port,  
South Wirral L65 3EB. Tel: 051-357 2961

**MANDARIN**  
SOFTWARE



**WIN**  
this solid silver  
Grail, worth £5,000,  
in the exciting Quest  
for the Holy Grail  
competition. Full  
details in every box.



Screen shots from  
Atari ST version



arrived at it he drooled with anticipation and pulled out the blue pencil. Alas for him, I've gone on to tell you what he should do.

If you're reading this and there isn't a reference to "slightly stunning" two paragraphs back, then the sub editor has deleted it without reading the rest of this. Have him taken out and shot.

The Starship Enterprise leaving the spacedock demo on 17 Bit 329 has lost some of its sparkle, which brings me to a valid point. If I'd wanted a machine that gave me pretty pictures and sound, I'd have bought a video recorder. For a couple of hundred pounds it will run animation and sound for four hours. I mean, it's nice to see the Amiga stretched to its capabilities, but if a film company were to put four shots of the Enterprise leaving a dock in space on a video, we'd consign it to the bin.

Mind you, I got a buzz from watching Arthur Fairclough (three doors up the hill on the left) drop his jaw in amazement and head off to the local paper to put in the following classified ad: *FOR SALE. Atari STFM. Only 2 weeks old. Still in box. Unwanted gift.*

That's all very well, and at least it got Arthur a decent computer, but I still feel that demos of this sort have to be looked on as a consumable that may only be watched a few times and then either consigned to the disc box or reformatted.

**F**Ollowing John Kennedy's advice in the Basic series last month, I decided to look to the chocolate digestive as an alternative data storage medium. But although it's a good standby, the constraints of a single sided 178k format is too restricting for my purposes. So I delved deeper.

I've found that chocolate Hob Nobs will format to about 440k, but again they are only single sided. My finest result was to use a Burton's Wagon Wheel as a 20 meg removable hard disc, taking advantage of the alternate layers of chocolate, marshmallow and biscuit to distinguish the different platters. Only problem there is that it needs to be kept cool or you



Fred records a gold fish disc

programs all run together.

Less of the frivolity and back to the serious stuff.

Public domain software is arriving so thick and fast that it would need a magazine all to itself to cover everything. It is easy to keep on looking for the new stuff and forget the old, so every month I'm going to blow off the cobwebs and tackle a couple of golden oldies.

And where better to start than with a goldfish. There are two ways to get a goldfish - win one at a fairground or send Fred Fish some money. I chose the latter, and for a mere five US dollars each plus five dollars postage, Fred sent me some goldfish.

Goldfish discs are selected popular goodies from the Fish collection put on to a compilation disc. On the original discs Fred usually includes the source code but on the goldfish you get just the program and documentation.

This saves a lot of space and makes for a disc absolutely crammed with buckets of programs. The documentation has a note saying

which Fish disc has the original and therefore the source code, thus making a reasonable compromise.

First into the deep fat fryer was Goldfish 1, a collection of games and things. It has the ever present Triclops and Gravity Wars plus a directory called Cutestuff which contains a few of those silly little progettes that make Workbench misbehave.

There is the one that tilts the screen, the other one that makes the windows bounce around the screen and a nasty little varmint that causes the screen to become like a slightly out of tune TV with a snowy effect.

Goldfish 2 is a tidge more serious with C-Shell and a few other straight faced programs. There are a couple of PD comms utilities as well, but despite its permanent frown, it's still good value.

Sitting next to a portion of chips is Goldfish 3 with its zillions of neatly ordered utility progs. SunMouse, DiskSalv, IconType, ID Handler DropShadow and about umpteen more make this one a contender for the most crowded disc of the year. You can read more about DiskSalv on the cover disc pages because we've given you the latest version on the front cover this month.

**Y**ORKSHIRE has 7,943 telephone boxes. And if Datameg of Canada succeeds, each one of those will have a universal socket connector. Undergoing trials in Ontario at present, the connector is a simple addition to any payphone allowing direct connection to a modem.

Designed by Mick Saunders, it was a product of necessity. Mick lived in a college house where the only line was a payphone. No more installations were possible, so he made modifications to it.

It worked fine and Mick was able to download from his favourite PD bulletin boards. His cousin Eileen brought a diagram home to the UK, and with some changes to voltage it has been working in a phone box in West Yorkshire since April. The price is to be set at £12.50. Ho-hum, if you had a hundred grand to spend you



could do the other 7,942 boxes and still have enough left to buy an Amiga, a good monitor and some software.

Good old Vic West, the Calor Gas Man. He came round with yet another pearl of wisdom last week. "I won't come in," he said. With all these viruses about, you can't be too careful."

"It's OK, we haven't been ill," I said.

"No, no, not you," he whispered. "It's your computer I'm worried about. I wouldn't want my BBC Micro to catch anything off your Amiga."

Still, I suppose I can't expect any more from a guy who says that the BBC implementation of Elite is the best.

Importers beware. As well as rumours of a new tax on software any program you import from abroad attracts vat at the standard rate of 15

per cent. I was leafing through some Stateside mags and saw what looked to be a bargain.

After I'd added postage both ways, the price of packaging, the loss of funds in the exchange rate and the dreaded vat, it would have cost me £16 more and taken a month longer to get. The Romans used to say *caveat emptor*. For the benefit of those who only use living languages it means: Buyer beware.

This column wouldn't be complete without a word about quilted anoraks. I was taken to task for my shoddy treatment of train spotters last month. One reader invited me to stand on the end of the platform with a bunch of his friends and savour the delights of waiting for D200, the first of the English Electric type 4s, to steam past.

"How can a Diesel steam past?" I asked.

"Don't be pedantic," I was told by

## WHERE IN THE WORLD?

**David French Software**, Gateacre, Devon Road, Salcombe, TQ8 8HQ. (Tel 0548 842965).

**Fred Fish**, 1346 West 10th Place, Tempe, Arizona 85281, USA. (Tel 0101 602 894 6881).

**17 Bit Software**, PO Box 97, Wakefield, WF1 1XX. (Tel 0924 366982).

Trevor. He's one of Ralph's friends.

Sheesh! Three and a half hours waiting in a Nor Easterly gale to be told by a leering BR employee that it was diverted by the Settle-Carlisle line and was now cosy and warm in Palmaidie shed.

Still, Ralph's mum's homemade vegetable soup from the thermos made up for the cold and all those quilted anoraks. I never saw anyone wear one with the pixie hood up before.

# PUBLIC APOLOGY

M.D. Office Supplies would like to take this opportunity to apologise to all its competitors. We shall with immediate effect supply direct to the public, Computer discs, Storage boxes, etc. AT BELOW WHOLESALE PRICES

<b>5 1/4 5.25" DISCS &amp; BOXES</b>	<b>5 1/4</b>
25 5.25" DS-DD 96 TPI with 50 Capacity Lockable Storage Box	£12.99
50 5.25" DS-DD 96 TPI with 100 Capacity Lockable Storage Box	£18.49
75 5.25" DS-DD 96 TPI with 100 Capacity Lockable Storage Box	£23.49
100 5.25" DS-DD 96 TPI with 100 Capacity Lockable Storage Box	£29.49
200 5.25" DS-DD 96 TPI with 2 100 Capacity Lockable Storage Boxes	£54.99
OUR 5.25" DISCS ARE VERY CAREFULLY SELECTED TO GIVE YOU 100% ERROR FREE PERFORMANCE. EACH DISC IS OFFERED WITH OUR 100% MONEY BACK GUARANTEE AND IS SUPPLIED WITH LABELS	

<b>3 1/2 3.5" DISCS &amp; BOXES</b>	<b>3 1/2</b>
25 3.5" DS-DD 135 TPI with 40 Capacity Lockable Storage Box	£22.95
35 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box	£31.95
45 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box	£37.95
55 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box	£44.95
65 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box	£49.95
75 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box	£54.95
OUR 3.5" DISCS ARE VERY CAREFULLY SELECTED TO GIVE YOU 100% ERROR FREE PERFORMANCE. EACH DISC IS OFFERED WITH OUR 100% MONEY BACK GUARANTEE AND IS SUPPLIED WITH LABELS	

### HIGH DENSITY 5.25" DISCS

25 5.25" DS HD 1.6MB plus 50 BOX	£21.99
50 5.25" DS HD 1.6MB plus 100 BOX	£41.99
100 5.25" DS HD 1.6MB plus 100 BOX	£69.99

### HIGH DENSITY 3.5" DISCS

10 DS HD 3.5" DISCS	£19.99
30 DS HD 3.5" DISCS	£57.99
50 DS HD 3.5" DISCS	£94.99

### BULK BUYERS

100 DSDD 3.5" TPI	£69.99
150 DSDD 3.5"	£100.00
200 DSDD 3.5"	£129.99
500 DS DD 3.5"	£304.99
250 DSDD 5.25"	£64.99
500 DSDD 5.25"	£119.99
1000 DSDD 5.25"	£219.99

### PRICE AND QUALITY GUARANTEE

All our Discs are top quality products and are certified 100% error free. Should you ever see a comparable product advertised in this magazine at a lower price we will not match it we will

**BEAT IT GUARANTEED**



**M.D. OFFICE SUPPLIES**

18 CRESCENT WAY, FARNBOROUGH, KENT BR6 9LS

TELESALES HOTLINES: 0689-61400

All prices include VAT and Delivery UK only

Supplied subject to availability. E.O.E.



**M**OTOROLA chips are rather remarkable in the computing world insofar as they are very compatible. The least powerful member in the family is the 68008, as used in the QL. This was hampered by an 8 bit address bus and only really took off in the control mechanisms for washing machines.

The 68000, which we all know and love, has a 24 bit address bus and 16 bit internal registers. That is, it can move data internally 16 bits at a time. It works at a clock rate of 7.16MHz – a respectable rate of knots – but there is always room for improvement.

The model up from the 68000 is the 68010, which is slightly faster because it has an internal ram cache. Here the processor remembers the last couple of bytes it was looking at and a few bytes on either side for good measure.

After completing execution of an

instruction it checks to see whether or not it can use the data held in its ram instead of reading the slower main memory. If it can, the operation is much faster, since no external accessing has to be carried out.

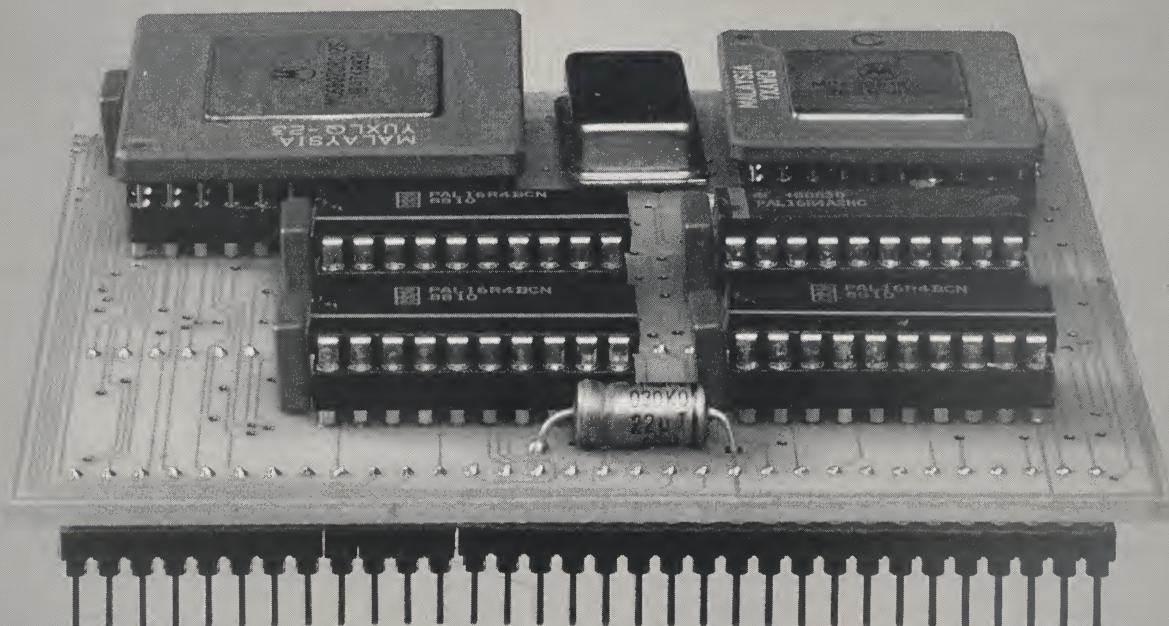
The 68020 goes one step further because it is a 32 bit processor. This sounds wonderful until you realise that the processor needs two cycles of the 7.16MHz clock to read the data from the Amiga's 16 bit ram into its registers. The Animate Turbo Board counters this problem by upping the clock rate to a whoppingly fast 14MHz.

Unfortunately – isn't there always an unfortunately? – the rest of the custom chips in the Amiga will still chug along at 7MHz, limited by the speed the processor can get the operating system data from the roms. The nett result is that when you

switch the computer on you won't notice the difference.

The other important chip which you can fit to the Animate Turbo Board is the 68881 maths co-processor. This shares the data and addresses buses with the processor and whenever it sees a maths instruction go by it says: "Hold on, I can do that one!" and tells the processor the answer. Because it works at the upped cycle rate of 14MHz, the chip is very fast. The co-processor is now supported in the libraries supplied with the latest (1.3) version of Workbench, which means any C or assembler programs you write can take full advantage.

Fitting the board on an A500 first involves removing the outer case and waving bye-bye to the warranty. The



# Undercover operation

*John Kennedy lifts the lid on a 68020 for the A500*

FLOATING POINT	68020/68881	68000
10000 functions	4.7 secs	17.5 secs
256000 functions	48 secs	150 secs
SAVAGE TEST	68020/68881	68000
2500 iterations	0.46 secs	59.6 secs
SIEVE TEST	68020/68881	68000
100 iterations	27.2 secs	45.72 secs
WHETSTONE TEST	35.82 secs	213.06 secs

*Timings of the demonstration software – all very impressive, I'm sure*

outer case is held in place with half-a-dozen small screws with Allen key heads. These are easily removed with a pair of long-nosed pliers – or the correct official Commodore tool – and the case lifts off to reveal the large metal RF shield. More screws hold this in place. Removing the shield will allow access to the unsuspecting 68000.

Taking out a large chip is always a heart-in-the-mouth process, especially as the first time it is removed the fit is very tight, causing that horrible noise which sounds like something very valuable being slowly broken.

Once the 68000 is removed the new board can be inserted into the vacant socket. This is where the first problem becomes apparent because pressing the board home can displace a small capacitor mounted nearby. In my case it didn't break off, although it was a very close thing. The second problem comes to light after the board is fitted – there is no longer room for the metal shielding, leaving no choice but to reassemble the computer without it.

Powering up revealed a black

screen. This was a tense moment. A thorough investigation traced the problem to the power supply plug which had not been inserted properly into the socket.

**S**UPPLIED with the board is a disc of software which demonstrates the speed of the new system. These timings are reproduced in Figure I, while Figure II shows the times taken to produce a ray-traced coffee cup with Sculpt Animate 4D.

Using the board from AmigaBasic reveals some interesting results. Of four programs written for testing purposes, dealing with floating point operations, integer operations, string operations and graphics, only the floating point program showed any signs of a speed increase, and then only a touch faster. If the programs were compiled with Hisoft Basic, which uses the 1.3 maths libraries, the difference would have been greater. AmigaBasic uses its own routines which ignore the 68881 (curse you Microsoft).

Other programs actually ran slower by a very small amount, probably due

to the increase in processing speed being absorbed by the need to access ram twice as often. Other accelerator boards solve this problem by supplying a healthy quantity of 32 bit ram – usually at least 2 meg. This is why other accelerator boards cost several times as much as the Animate Turbo Board.

A very worrying point is that some software, including LED Storm, will not run with the 68020 processor in place. Fitting the board is definitely something you want to do as little as possible. Having to remove it to run certain programs is a serious no-no. It is academic whether this was caused by illegal code on the part of the programmer or as a consequence of the internal ram cache of the 68020 – the software did not run and needed the 68000 refitting before it would.

**W**HEN money is no object and a heavily maths-dependant piece of programming is needed, this board will do the job nicely. When using software such as Sculpt-4D, the speed increase is considerable.

However, when using AmigaBasic the program will usually run slightly slower than if it was using the good old 68000. Programs must make special use of the maths libraries to effect any speed increase.

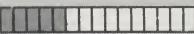
To an average programmer like myself the Animate Turbo Board is nice, but too expensive to be worthwhile. The money would be better spent on a hard disc.

#### REPORT CARD

Animate 68020/68881 Turbo Board  
£498

Amiga Centre Scotland 031-557 4242

**EASE OF USE** .....   
A very worrying point is that some software, typically a good game, will not run with the 68020 in place.

**SOFTWARE** .....   
Supplied with the board is a disc of software which demonstrates the speed of the new system.

**SPEED** .....   
Programs must make special use of the new maths libraries to effect any increase in speed.

**VALUE** .....   
Too expensive to be worthwhile.

**OVERALL** .....  53%

The money would be better spent on a hard disc.

MODE	68020/68881	68000	Speed-up
Painting	12.4 secs	25.1 secs	202.4%
Scanline painting	34.3 secs	62.2 secs	181.3%
Snapshot	903.2 secs	2416.6 secs	267.6%

Some real results using the board with Sculpt Animate 4D. The times are those taken to produce a full image of a coffee cup

# DEAL DIRECT

ALL PRICES INCLUDE VAT & DELIVERY  
ALL DISKS ARE SUPPLIED WITH LABELS, ENVELOPES & WRITE PROTECTS

## DISKS



		Qty 10	Qty 20	Qty 30	Qty 50	Qty 100
3.5"	Uncertified	£6.99	£13.80	£20.50	£33.99	£67.00
3.5"	DS DD 135 TPI GOOD	£7.50	£14.80	£21.70	£36.50	£72.00
3.5"	DS DD 135 TPI SUPERB	£7.99	£15.90	£22.99	£38.99	£74.99
3.5"	12 Holder Solid Plastic with 10 Disks add 0.80 to prices above per Box					
3.5"	Branded DS DD 135 TPI Terra TOP QUALITY	£9.99	£19.00	£28.00	£44.00	£87.00
3.5"	Branded DS DD 135 TPI Sony	£11.99	£22.00	£32.00	£50.00	£99.00
3.5"	Branded DS High Density 2.0 Meg Mimic	£21.00	£40.00	£59.00	£97.00	£179.00
3.5"	Branded DS High Density 2.0 Meg Sony	£29.99	£58.00	£85.00	£140.00	£275.00
5.25"	DS DD 48 TPI-Packed in 10's & 25's	£3.50	£6.50	£9.00	£14.50	£29.00
5.25"	10 Holder Solid Plastic with 10 Disks add 0.90 to price above per Box					
5.25"	Branded DS DD 48 TPI 3M	£6.99	£13.50	£20.00	£33.00	£65.00
5.25"	Branded DS High Density 1.6 Meg 3M	£9.99	£19.50	£27.90	£45.00	£93.00

## DISK STORAGE BOXES



		Qty 1	Qty 2	Qty 3	Qty 5
3.5"	12 holder solid plastic extra strong	£.99	£1.90	£2.70	£4.50
3.5"	40 holder lockable 2 keys & dividers	£4.99	£9.50	£14.00	£17.50
3.5"	80 lockable 2 keys & dividers	£5.99	£10.99	£15.99	£22.00
3.5"	100 holder lockable 2 keys & dividers	£6.99	£12.99	£18.99	£27.50
3.5"	150 holder stackable posso	£13.99	£27.00	£39.99	£59.99
5.25"	50 holder smoked plastic	£4.50	£8.50	£11.99	£18.99
5.25"	120 holder lockable 2 keys etc.	£5.99	£11.50	£16.99	£25.99

BUY 3 BOXES  
AND GET 1  
FREE TERRA  
DISK DS DD

## THE ULTIMATE DISKS WITH STORAGE BOX OFFER - ALL DISKS AND BOXES AS ABOVE

3.5"	40 holder lockable disk box with	10 x	3.5" DS DD Disks	£11.99
3.5"	40 holder lockable disk box with	20 x	3.5" DS DD Disks	£19.95
3.5"	40 holder lockable disk box with	30 x	3.5" DS DD Disks	£28.95
3.5"	80 holder lockable disk box with	10 x	3.5" DS DD Disks	£12.99
3.5"	80 holder lockable disk box with	30 x	3.5" DS DD Disks	£26.99
3.5"	80 holder lockable disk box with	40 x	3.5" DS DD Disks	£35.95
3.5"	150 holder stackable posso box with	100 x	3.5" DS DD Disks	£84.00
5.25"	120 holder lockable disk box with	50 x	5.25" DS DD Disks	£19.50



## JOYSTICKS

	1	2	1	2
Cheetah Challenger	£4.99	£9.00	Turbo Junior	£3.99
Quickshot 2 Turbo	£8.99	£17.00	Turbo super	£5.99
Cheetah Mach 1	£8.50	£16.00	Cheetah 125+	£5.99
Competition Pro 5000	£9.95	£19.00	Ram Delta	£7.50

Atari ST Twin Joystick Extension  
Mouse mat with picture of Mouse - soft  
Atari St Centronics parallel Printer Cable  
3.5" & 5.25" Disk Cleaning Kits & Fluid  
Mouse House



QUICKJOY 2 TURBO THE  
ULTIMATE SPECIAL OFFER

Qty 1 £6.99  
Qty 2 £13.50

## PRINTER RIBBONS

	Qty 1	Qty 2	Qty 6	Qty 1	Qty 2	Qty 6
Amstrad 8256	£3.99	£7.50	£18.00	Citizen 120 D	£3.50	£6.50
Amstrad 9512	£3.50	£6.50	£14.90	OK1 182/192	£3.99	£7.50
Amstrad DMP2000/3000	£2.99	£5.50	£13.99	Panasonic 1080/90	£3.50	£6.50
Amstrad DMP 4000	£3.99	£7.50	£19.99	Ricoh 1300/1600	£3.99	£7.50
Brother HR15/20/40	£3.99	£7.50	£18.00	Shinwa CP 80	£3.99	£7.50
Epson LX 80/86/GX 80	£3.50	£5.80	£15.50	StarNL/ND 10	£3.99	£7.50
Epson MX/FX/RX/NX 80	£3.50	£6.50	£14.90	Cannon PW 1080	£3.99	£7.50
Epson MX/FX/100, 1000	£3.50	£6.50	£14.90	Star LC 10	£2.50	£4.80
Epson LX 800/LQ 800	£3.50	£6.50	£14.90	Star LC 24/10	£4.50	£8.50
Epson LQ/VP/100, 1050	£3.99	£7.50	£19.99	Commodore MPS 803	£3.50	£6.50

**Tel: 0533 471485**

24 hour disk hotline

Please post cheque with order payable to:

Midland Microsoft, (2) Mail Order Div. Ground Floor,  
Unit 22A, Sykefield, Leicester LE3 OLB

## SOFTWARE & HARDWARE SPECIALS

### RRP OUR PRICE

PACLAND	19.95	15.95
POPULOUS	24.99	19.99
FALCON	29.99	19.99
DENARIOUS	19.99	15.99

### RRP OUR PRICE

STARGLIDER 2	24.95	18.95
SUPER HANG ON	24.99	19.99
SPACE HARRIER 2	19.99	15.95
CRAZY CARS 2	24.99	14.95
WAR IN MIDDLE EARTH	19.99	14.95

### EDUCATIONAL

FUN SCHOOL AGE
UNDER 6
6-8
OVER 8

£15.99

EACH

### OUR PRICE

DIGI VIEW GOLD PAL	129.95
A.M.A.S. SAMPLER	99.00

### OUR PRICE

INTERNAL 1 MEG RAM EXPANSION	118.00
EXTERNAL DISK DRIVE	84.00

20% OFF RRP OF ALL SOFTWARE NOT JUST AMIGA SOFTWARE, DUE TO THE LARGE RANGE OF SOFTWARE, PLEASE PHONE 0533-513372 TO CHECK AVAILABILITY + PRICES



COME  
TO THE  
PROFESSIONALS!!!!



NOW TAKEN

2 Williams Clowes Street  
Burslem  
Stoke on Trent  
ST6 3AP  
Tel: 0782 575043



### AMIGA REDUCTIONS

Manhunter in New York ..	29.95	14.95
King of Chicago .....	29.95	8.95
Battletech .....	29.95	14.95
Police Quest .....	24.95	14.99
Real Ghostbusters .....	24.95	11.95
Afterburner .....	24.95	11.95
Space Quest II .....	24.95	13.95
Kings Quest III Pack .....	74.85	19.95
Football Manager II .....	19.95	9.95
Crystal .....	29.95	14.95
Silk Worm .....	24.95	14.95
Portal .....	34.95	7.95
Robbeary .....	24.95	5.95
Theexter .....	24.95	4.99
Action Service .....	19.95	4.95
Pioneer Plague .....	24.95	6.95
Roger Rabbit (1Meg) .....	29.95	9.95
Soccer Supremo .....	19.95	6.95
Marias Christmas Box .....	24.95	5.95
Summer Olympiad .....	19.95	5.95
Winter Olympiad .....	19.95	5.95
Vindicators .....	24.95	9.95
Indoor Sports .....	24.95	5.95
Incredible Shrinking Sphere .....	24.95	9.95
Fire Power .....	24.95	6.95
Leaderboard .....	24.95	7.50
Out Run .....	19.95	7.50
Academy .....	24.95	6.95
Armageddon Man .....	24.95	3.99
Hawkeye .....	19.99	13.99
Vigilante .....	14.99	10.95
Speed Ball .....	24.95	16.95
Fun School Under 6 .....	24.95	14.95
Fun School 6 to 8 .....	24.95	14.95
Fun School 8 to 12 .....	24.95	14.95
Lords Rising Sun .....	29.95	21.95
Hollywood Poker Pro .....	29.95	19.95
Batman .....	24.95	17.95

### AMIGA SPECIAL OFFERS

Nigel Mansells GP .....	24.95	5.95
Rocket Ranger .....	29.95	18.95
Sword of Sodan .....	29.95	15.95
Populus .....	24.95	18.95
Deja Vu .....	24.95	9.99
GFL Football .....	29.95	4.99

### AMIGA SPECIAL OFFERS

Star Goose .....	24.95	6.95
Backlash .....	19.95	5.95
GFL Golf .....	24.95	6.95
Strike Force Harrier .....	24.95	5.95
Foundations Waste .....	24.95	5.95
Romantic Encounter .....	24.95	5.95
Blackjack Academy .....	24.95	5.95
Solitaire Royal .....	29.95	6.95
Quadrailien .....	24.95	4.99
Slaygon .....	24.95	4.99
SDI (Cinemaware) .....	29.95	8.95

**Precious Metal**  
Xenon, Crazy Cars,  
Captain Blood,  
Arkanoid 2  
**£17.95**

GFL Basketball .....	24.95	6.95
GFL Baseball .....	24.95	6.95
Teenage Queen .....	24.95	15.95
R-Type .....	24.95	16.95
Pacmania .....	19.95	13.95
Pacland .....	19.95	13.95
Prison .....	19.95	11.95
Super Hang On .....	24.95	16.95
Dungeon Master .....	24.95	16.95
TV Sports Football .....	29.95	21.95
Denaris .....	24.95	16.95
Falcon .....	29.95	19.95
Test Drive II .....	29.95	22.95
Deluxe Paint III (1 Meg) .....	.79.95	54.95
Personal Nightmare .....	29.95	18.95
Archipelagos .....	24.95	15.99
Space Harrier .....	24.99	15.99
Journey to Centre of the Earth .....	19.95	13.95
L.E.D. Storm .....	19.95	13.95
Bio Challenge .....	24.95	14.95
Gauntlet II .....	24.95	16.95
Super Scramble .....	19.95	14.50
Scorpion .....	24.95	15.95
Lombard RAC Rally .....	24.95	14.95
Bards Tale .....	24.95	7.50

### AMIGA SPECIAL OFFERS

Marble Madness .....	24.95	7.50
Vixen .....	24.95	4.95
Bombuzal .....	24.95	6.95
Fernandez Must Die .....	24.95	6.95
Faery Tale Adventure .....	24.95	8.95
Tracers .....	24.95	5.95
Ebon Star .....	24.95	5.95
Hellfire Attack .....	24.95	5.95
Galactic Invasion .....	24.95	5.95
Leather Goddess .....	29.95	6.99
Nord & Bert .....	29.95	6.99
Sherlock .....	24.95	6.99
Bureaucracy .....	34.95	6.99
Better Dead Than Alien .....	24.95	5.95
Strip Poker II+ .....	19.95	7.95
Spitting Image .....	24.95	3.99
Shanghai .....	24.95	4.99
Maniax .....	24.95	4.99
Garfield II (Winters Tale) .....	24.95	15.95
Zac McCracken .....	24.95	17.95
War in Middle Earth .....	24.95	16.95
Road Blasters .....	19.95	13.95
Lancelot .....	24.95	15.95
Three Stooges .....	29.95	9.95
Division 1 .....	19.95	5.95
Billiard Sim .....	24.95	7.95
Wanted .....	24.95	6.95
Photon Paint (no box! just disc manuals + disc instructions .....	79.95	19.95

**Virus Killer for the  
Amiga as endorsed by  
Commodore  
themselves  
ONLY £7.95**

We offer a fast reliable service  
Cheque's P.O's to:  
**CASTLE SOFTWARE**  
Any games not listed phone our  
Hotline now on  
0782 575043

Street  
rslem  
Trent  
6 3AP  
75043

RS

5 7.50  
5 4.95  
5 6.95  
5 6.95  
5 8.95  
5 5.95  
5 5.95  
5 5.95  
5 5.95  
5 5.95  
5 6.99  
5 6.99  
5 6.99  
5 6.99  
5 5.95  
5 7.95  
5 3.99  
5 4.99  
5 4.99  
5 15.95  
5 17.95  
5 16.95  
5 13.95  
5 15.95  
5 9.95  
5 5.95  
5 7.95  
5 6.95

5 19.95

e  
by

ervice

RE  
e our

**E**DITORS are one of those things we all argue over. Like languages they all have their good and bad points; like languages there are those who love their editors, and loathe all others.

TR TextEd is different. Nobody will love it. It falls untidily between light modification editors like AmigaDOS's ED and the power editors like MicroEmacs.

It comes on one disc, which does not have Workbench installed on it – silly, because Commodore has gone out of its way to make that as easy and cheap as possible. There is no excuse for not having it as the disc is only half full.

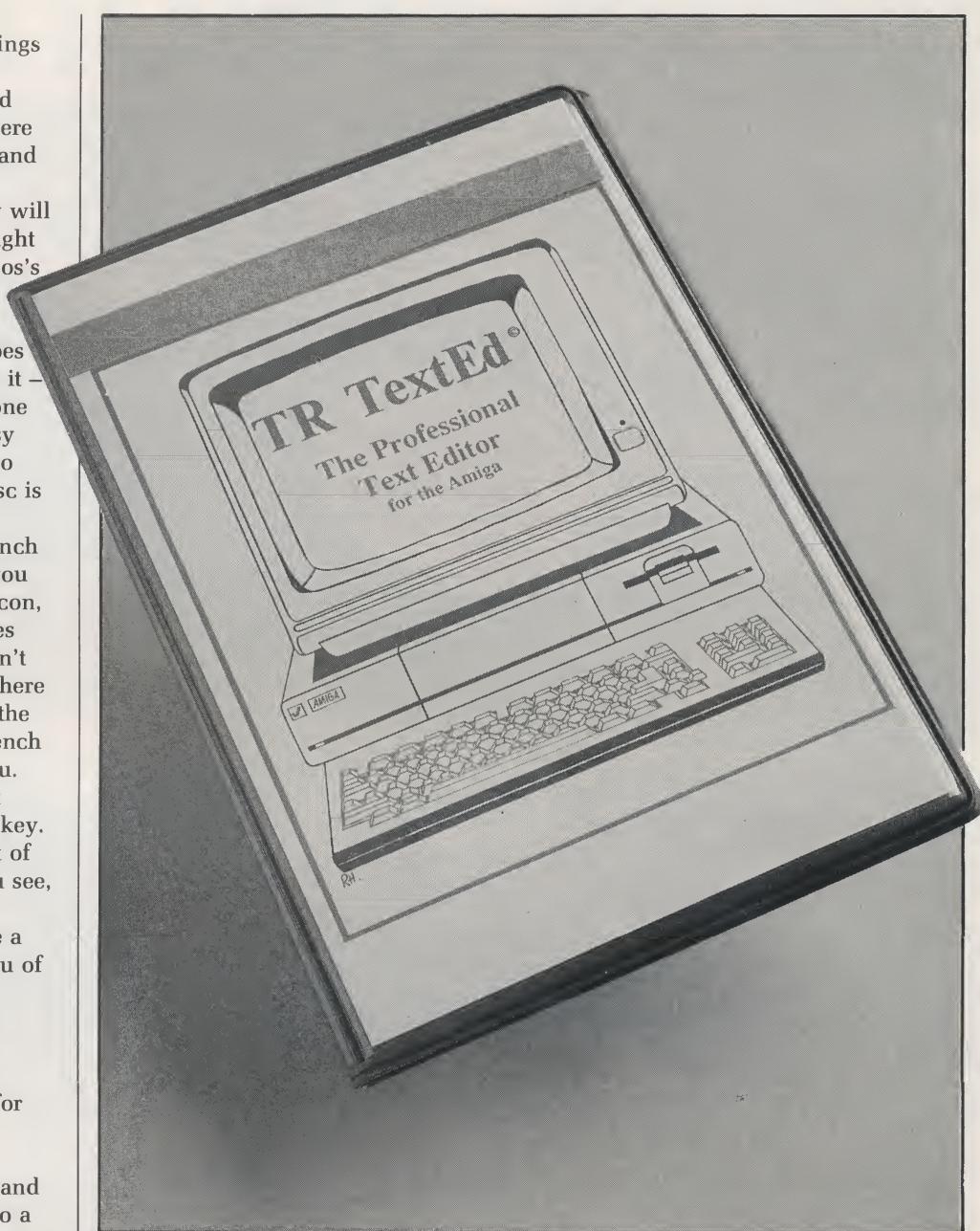
Once you have booted Workbench and opened the TR TextEd disc you can load the program. Click the icon, and up it pops. Kerpow. It decides that your Workbench colours aren't up to scratch, and sets its own. There isn't a good reason for changing the colours, as it runs on the Workbench screen. It's just done to annoy you.

You are now running. The first thing I usually do is hit the Help key. TR TextEd says in the bottom left of its window: "Help is active". You see, this is a help system which now wants you to press a key or make a menu selection. No index or menu of functions.

On its own this kind of Help is practically useless. Of course TR TextEd surpasses itself when you press a key because then it asks for disc volume HELP.

And where is HELP? It's a directory on the TR TextEd disc, and you'll have to get a CLI up and do a "Assign Help: DF1:Help", and then you'll get Help. I hope you are following all this, because the novice user won't.

The final indignity in the system appears if you resize the TR TextEd window. Make it smaller than 73 columns and Help ceases to work because it doesn't pop up it's own



# Word imperfect

window, but uses the edit one, which is formatted to – you guessed – 73 columns per line.

So after being irritated by the Help system, on to edit a file. Select Edit File in the menu, and up pops a requester. No, not a file request like practically every other Amiga product, just an *Enter a file name* requester. Unforgivable. File requesters aren't hard to write, and there are plenty of editor requesters which you can duplicate in function. But there you go.

**C**ATALOGUING misfeatures goes on. Mouse positioning? Only on the current screen, and no scroll bars, and you can't double click to mark start and end of block.

Status lines? Two, one at the top telling you the usual bits, like Line, Column, Insert Mode, if Search is case sensitive, the Ascii value of the character you are on and how big your line buffer is. Then at the bottom of the window two lines are wasted

telling you what your right hand margin is set to when there's space up on the top line.

Cut and Paste? Apart from the confusion of options, it turns out that you can only do this on complete lines, so no snipping that function out of that bit of C code. Crude is not the word for it.

It keeps on in this vein. The fonts option which will only use non-proportional 8 point fonts unless it's its own deformed 8 point font. Eventually you'll get to the keyboard layout. All the functions which aren't on the menus are on the function keys, with combinations of Shift Alt and Ctrl. Lovely and easy to program, especially as you can't reconfigure them.

The more I played with TR TextEd the more irritated I became with it. The manual, a demonstration of why you must never let the programmer write the manual, says the author had 18 years of working with mainframe, mini and micro editors. He must have used some damnably weird and hideously cut-down editors to produce this one.

I can't recommend TR TextEd. The version I had was V3.0, and quite honestly, if it's taken this long to get to this, it's going to be a long while before it becomes a worthwhile editor. You get better (ED and MicroEmacs) on your Workbench discs, and much better editors are available commercially.

## REPORT CARD

TR TextEd  
HB Marketing 0895 444433  
£29.95

EASE OF USE .....  
There are always people who buy things out of masochism. If you do, you'll like this one. Quite a lot.

SPEED .....  
Lovers of the cack-handed user interface will rejoice in complicated fixed function key combinations.

VALUE .....  
Does anyone want to buy my copy?

## OVERALL 7%

A generous score for a program with absolutely no redeeming features.

# S.C.C. MAIL ORDER

## AMIGA HARDWARE

	CUMANA
Amiga 500	From £359.99
Amiga 500/1084S	£614.99
A1010 Disk Drive	£99.99
A1084S	£259.99
A501 Ram	£134.99
Expansion/Clock	£24.99
A520 Modulator	£24.99
A590 20 Mb Hard Drive	£199.99
Vortex 40Mb Hard Drive	£544.99
PSU	£133.99
1Mb 3.5" Drive	£89.99
1Mb 3.5" Drive +	£116.99
1Mb 5.25" Drive	£121.99

## SOFTWARE

SOFTWARE	
WORD PROCESSING	SPREADSHEETS

DESK TOP PUBLISHING	
City Desk V1.2	£87.55
Pagesetter	£67.35
Pagestream	RING
Professional Page	£251.90
Shakespeare	£125.95

DATABASES	
Acquisition V1.3	£209.95
Data Retrieve	£40.40
Micro Base	£14.80
Microfile Filer	£67.35
Microfile Plus	£117.90
Superbase Personal	£44.45
Superbase Personal 2	£74.00
Superbase Prof	£185.30

LANGUAGES/ASS./COMPILERS	
Absoft AC Basic	£164.30
Absoft AC Fortran	£248.50
APL 68000	£99.95
Interchange	£42.00
K-Gadget	£25.25
Lions Fonts	£50.50
Mailshot	£18.50
Mailshot Plus	£37.00
Newsletter Fonts	£25.25
Power windows V2.5	£58.95
Assempro	£43.75
Asmtek C Developer	£132.70

Please ring for prices/availability on any hardware/software/peripherals not listed. (Full price list on request)

Please make cheques/postal orders payable to S.C.C. MAIL ORDER. All prices are inclusive of V.A.T.  
All software delivered free (UK only). Hardware/Peripheral Carriage rates on request  
ALL PRICES CORRECT AT TIME OF GOING TO PRESS All items subject to availability.

## S.C.C. MAIL ORDER

29 Crowtree Road, Sunderland SR1 3JU. Telephone: 091 565 5756



# Hard and fast



WRITING for a computer magazine is not all it's cracked up to be, especially when the editor plonks a lump of hardware on your already overcrowded desk and requests 1,200 words by Friday. No sweat.

Then you remember the magazine has reviewed three similar lumps of hardware in the past six months and you are expected to find something new to say. Words flow like cold treacle. Ah, the joys of computer journalism.

Luckily for me the Vortex System 2000 has a lot to offer over and above the features of your bog standard Amiga hard drive. For a start, it's not just for the Amiga. It comes in two bits - the 40 meg drive, a stylish grey-white metal box about 9in square by 2.5in deep, and something called a

#### Personality Module

The Vortex Personality Module makes it possible to fit the System 2000 hard drive unit to any number of computers. Modules are currently available for the Amstrad PCW, PC and PPC ranges, the Schneider Euro PC, the PS2 Model 30 and other IBM compatibles plus, of course, one module for both the A500 and A1000.

Before you get excited, this doesn't mean you can remove your formatted Amiga System 2000 hard drive, attach it to the Personality Module on your PC and immediately start reading and writing to it. You have to reformat it first, losing all your data.

But it does mean that if you decide to change your computer system, a tried and trusted hard drive is just a £195 Personality Module away. It's probably a feature we loyal Amigans

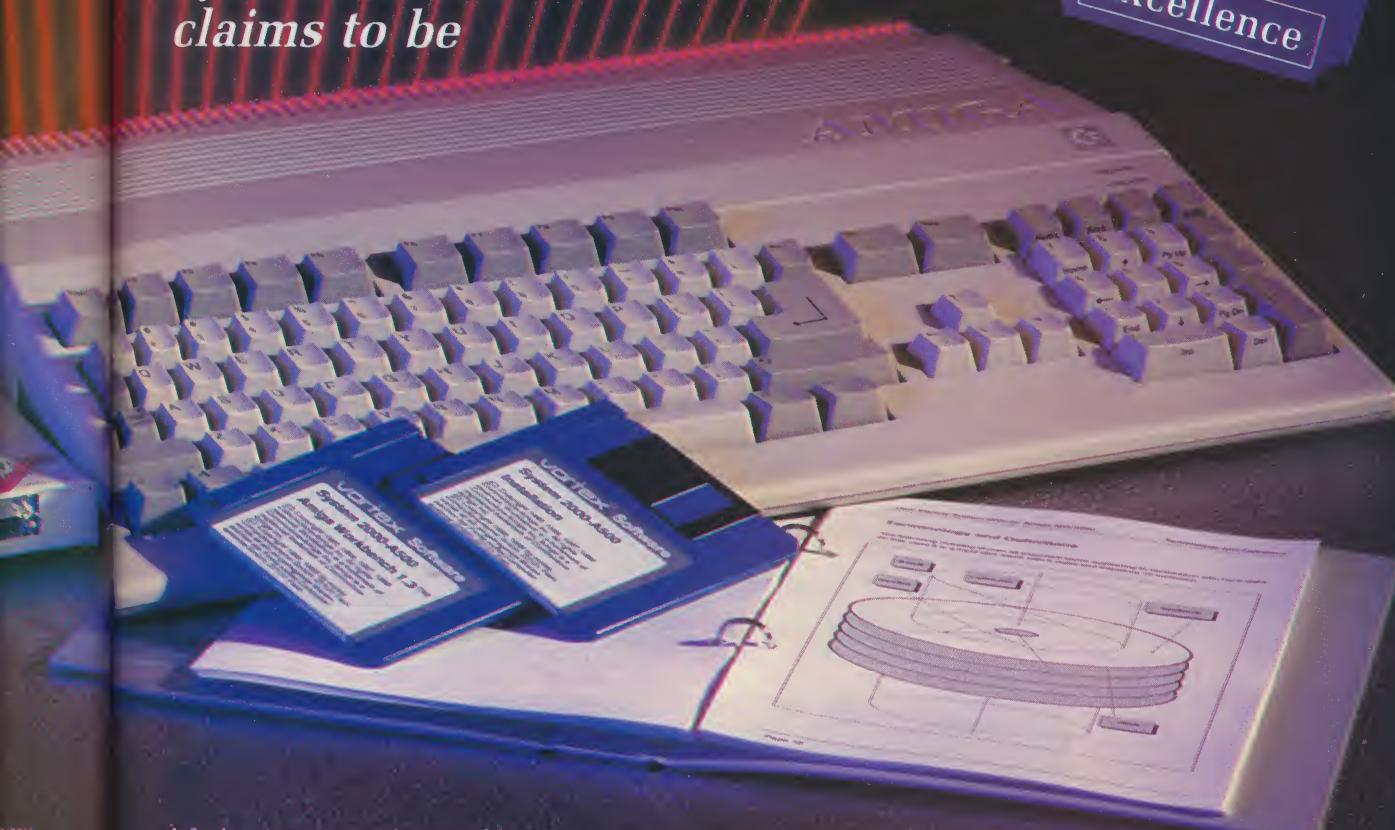
will never use, but it's nice to know it's there.

Inside the paperback-sized module is the Vortex developed Amiga BIOS eprom. It gives the System 2000 some pretty amazing autoboot facilities.

If you haven't upgraded to the Kickstart 1.3 rom yet, don't bother - this box of tricks will do what Commodore says can't be done: It will autoboot from Kickstart 1.2 and Kickstart 1.3. It will also autoboot from a Workbench 1.3 FastFileSystem partition. With a typical Startup-Sequence you can expect to be up and running in under 10 seconds.

MIRACLES have to be paid for. To autoboot from KS1.2, about 100k of memory needs to be reserved for the system. With the four

*If we told you that we know of a 40 meg hard disc which autoboots in under 10 seconds from Kickstart 1.2 or 1.3, you'd probably tell us to pull the other one. But Jeff Walker discovered that the Vortex System 2000 is all that it claims to be*



default 10 meg partitions grabbing about 30k each, this doesn't leave much elbow room on a vanilla A500. Depending on what you are doing in your Startup-Sequence, you'll only have about 200,000 bytes free after loading Workbench – nowhere near enough to do any serious computing.

If you have a KS1.3 machine, the System 2000 doesn't need that 100k so you're left with around 300k free, which is perhaps just enough to run one application. Multi-tasking? Unless they are very small programs, forget it.

So you're going to need more memory, which – as long as you have the cash – isn't a problem. 512k in the A500 trapdoor will do to start with. It's what I used to review the system. If you want to fit more, the Personality Module has a through

connector on to which you can push a 2 meg expansion.

Having been brought up like a good boy to believe that it was impossible for a hard drive to autoboot from KS1.2, I was interested in finding out how Vortex had worked this miracle. The West German company is insistent that it hasn't broken any rules. "We've patched Workbench," is the official line. And indeed, below the (c) Commodore et al bumpf on the supplied Workbench disc is Vortex's own copyright message.

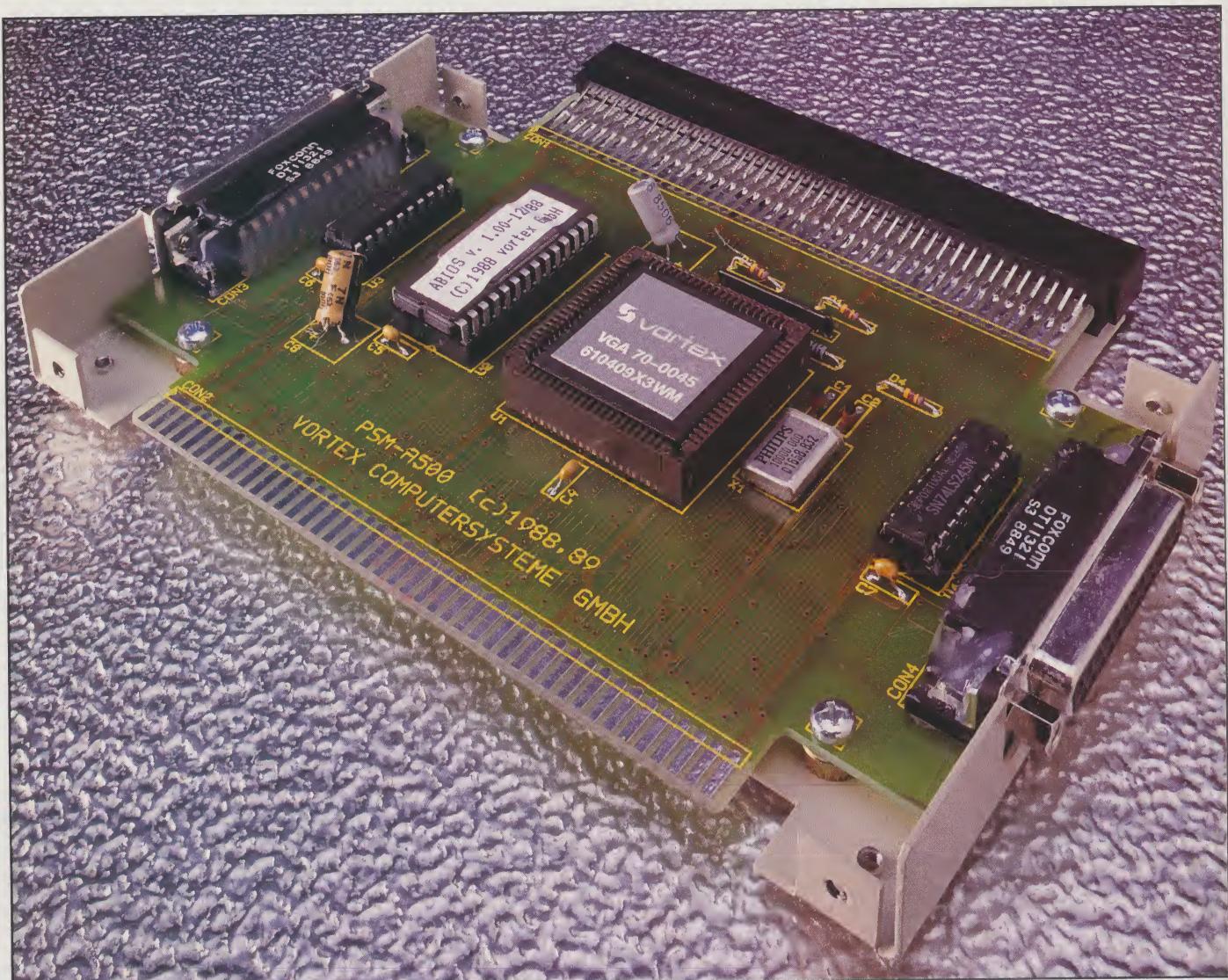
Commodore technoboffins have their own theories as to how the System 2000 works. Randell Jesup, programmer of the A590's HDToolbox, reckons that "drives which autoboot under KS1.2 take advantage of the diagnostic vector

used for testing the machines in production. It works, but is not recommended in general".

I can confirm that it does work. In fact it works very well. Over a period of two months the System 2000 has done me proud. It has not fallen down and I have yet to find a program that won't run with the hard drive plugged in.

This doesn't mean every program ever written is going to run, although Vortex says that if any software does not work with the Personality Module attached, it's because that software is breaking the rules, not the System 2000.

Nevertheless an option is at this moment being added to cut out the



Opening up the Personality Module reveals the ABIOS chip which drives the System 2000

hard drive on boot-up. Holding down the left mouse button while the system is initialising will prevent the Personality Module from activating. This has been included so that users who are short on ram will be able to run their larger programs without having to remove hardware from the expansion port. A little thought goes a long way.

The software is good stuff, although if you're not a meddler you'll have little use for anything except the public domain hard disc backup program. This is because Ideal Hardware of Surrey, Vortex's distributor in this country, supplies the System 2000 ready formatted and partitioned with the contents of the Workbench 1.3 already copied across. It really is a case of plug it in, switch on, and go.

Plugging it all in could be a



The non-standard hard drive port has been developed by Vortex to give high data transfer rates

problem if you are short of space. A sturdy cable runs between the Personality Module and the hard drive, but it is only a couple of feet in length. Much longer and the drive would suffer read/write errors. This means the drive unit has to be positioned either directly to the left of or behind and to the left of your A500.

I have one of those split level tables that has a shelf above the main table on which to plonk a monitor. The System 2000's lead is just long

enough to allow it to sit up there.

I'm a meddler. I like turning knobs, pushing buttons and typing commands just to see what happens. The first thing I do when I get my hands on a hard drive is fiddle with the partitions. Usually it's a real pain, even when you know what you're doing. Vortex has made altering the System 2000's default partitioning dead simple.

You run a program on the installation disc called Part. It presents you with some information

on how the partitions are currently set up, and then asks five questions about how you want your new first partition to look. It gives intelligent defaults. The only question you need to think about is length. The figure right shows my responses to set up a single 40 meg partition – all 803 cylinders under one roof.

Following the partitioning process, which is over in seconds, you have to format them – or it in my case. This involves re-booting from the Workbench disc, opening a Shell and using the normal AmigaDos Format command specifying the FFS option to get the FastFileSystem format and QUICK so you don't have to wait an hour for playtime.

All that's left to do is copy the entire contents of the Vortex Workbench disc over to the hard drive and away you go. Literally five minutes after starting the process it's finished and done with. Painless.

**M**ore good news: Vortex is making the setting-up process even more user-friendly. It is being re-written to be totally icon driven. Ideal Hardware says the new software should be ready about September. You will be able to upgrade if you buy a system with the old software.

One of the things you normally have to do when setting up a hard drive is add the partition details to the Mountlist file in the Devs: directory. Not with the System 2000 you don't. It comes with a file called Vmountlist which the system reads along with Mountlist on startup. Neat.

But to make roses smell sweet you generally need a bit of quality dung. The System 2000 has a real stinker. There are two ports on the Personality Module, the back one for plugging the System 2000 into, the front one originally intended for piggy-backing another hard drive. But the ports are not SCSI, and the piggy-back option isn't available.

The front port instead serves as the correct hole to plug the lead into if you are fitting the unit to an A1,000. So if you're looking to stack up a couple of hundred megs of hard storage, you'll have to look elsewhere.

German manuals rarely translate well into English, and the one I got with the System 2000 is no exception. Because of the excellent software, however, the manual was only needed to convince me I was pressing

```
PART for System 2000 on the Commodore Amiga
(c) 1988/89 vortex Computersysteme GmbH

The harddisk has 4 heads, 26 sectors per track and 803 cylinders
and has a capacity of 40.8 MB

Existing partitions:
1.Partition:

System 2000 Ins
StartCyl = 1
Length   = 200
FastFileSystem

2.Partition:

System 2000 Ins
StartCyl = 201
Length   = 200
FastFileSystem

3.Partition:

System 2000 Ins
StartCyl = 401
Length   = 200
FastFileSystem

4.Partition:

System 2000 Ins
StartCyl = 601
Length   = 202
FastFileSystem

Please enter new partition data
Abort entry with <End><RETURN>
Taking over the defaults with <RETURN>
The first Partition should begin with cylinder 1,
the lower cylinders are reserved for the harddisk and
partition data !!
One cylinder equals a capacity of 52.0 KByte

Startcylinder: 1
Length:        802
Log. Name:     DHO
Name:          Hard0
FastFileSystem? y

Startcylinder: End
```

*The partitioning program is the picture of user-friendliness. Soon it will be totally icon driven*

the correct keys at the correct times. Not to worry though, it has been re-written to make more sense.

In a way this is a shame, because there are a couple of screamers in the original. I may have the only hard drive in the world which has a backside.

**T**alking of backsides, in the rear of the manual is an appendix containing C listings and details of how to call the Vortex driver from your own software. Techies will need this, because instead of using the Amiga's Trackdisc. Device this hard drive is driven by the System 2000's custom Vortex.Device. The associated .H and .I files are on the installation disc.

This kind of documentation is a bit heavy for me, but no doubt programmers will be glad of it and will understand every word.

In use the System 2000 has a good feel to it. It's quick and solidly built. I liked it. In fact I like it so much I bought it. Pingpong dor technik and all that.

## REPORT CARD

Vortex System 2000  
Ideal Hardware 01-390 1211  
£573.85

**EASE OF USE.....**   
Plug it in, switch it on and away you go. No setting up needed, but easy – and fun – to change things if you're a born meddler.

**SOFTWARE.....**   
Extremely user friendly. A lot of thought has gone into it and it is being continually upgraded. The addition of a PD backup utility is a nice thought.

**SPEED.....**   
Hard drives are getting quicker all the time. Being able to autoboot from a WB1.3 FastFileSystem partition makes this the one to beat for speed.

**VALUE.....**   
Although almost £200 more than the CBM A590, the Vortex System 2000 is faster, has twice the storage capacity and autoboots from KS1.2 or 1.3.

**OVERALL** **92%**

*Except for the lack of a piggyback option, the System 2000 is hard to fault. Most users will find 40 megs more than adequate for their needs.*

# Evesham

## Micros

All prices include VAT/delivery

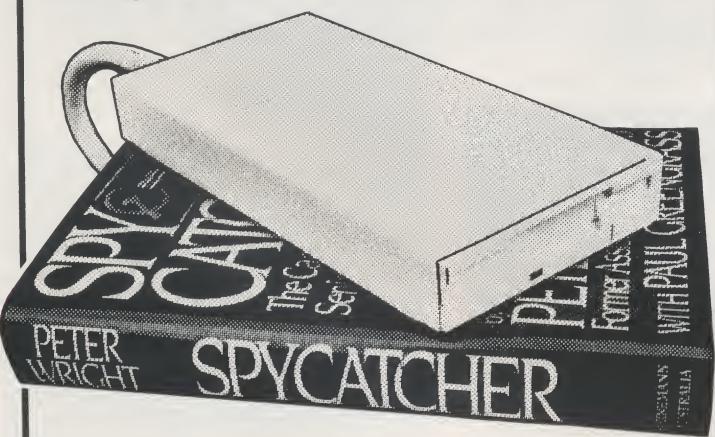
### SPECIAL OFFER AMIGA PACK

- All-new special Amiga 500 pack includes the following:
- ★ Amiga 500 computer
  - ★ TV Modulator
  - ★ Mouse & Mouse mat
  - ★ Joystick
  - ★ Zynaps
  - ★ Return of the Jedi
  - ★ Custodian
  - ★ Powerplay
  - ★ Mercenary
  - ★ Eliminator
  - ★ Hellbent
  - ★ Bubble Ghost
  - ★ and 1 extra game free, while stocks last!
  - ★ plus 5 disks of public domain software

All this for only £399.00!

Amiga 500, including TV modulator	£359.00
A501 RAM/clock expansion for Amiga 500	£129.00
Pye 15" FST TV/Monitor model no. 1185, Inc. Amiga cable	£269.00
ITT CP3228 16.5" FST TV/Monitor with remote control & cable	£229.00
Philips CM8833 colour monitor suitable for Amiga 500	£229.00
Philips CM8852 monitor as above, but higher resolution	£259.00
Philips TV Tuner AV7300, use with any composite monitors	£74.95
X-Copy powerful new disk copier	£149.95
Word Perfect	£69.00
Superbase Personal	£179.00
Superbase Professional	£179.00
A500 Dust Cover	£4.95

### 3.5" EXTERNAL DRIVES using Citizen drive mechanisms



- Suits Amiga 500 or Amiga 1000
- Top quality Citizen drive mechanism
- On / Off switch on rear of drive
- Throughport connector
- One megabyte unformatted capacity
- Slimline design
- Very quiet
- Long cable for location either side of computer
- Full 12 months guarantee

Ultra low price!  
**£74.95**  
inc.VAT and delivery

### 3.5" Disks

10 Bulk packed DS/DD 3.5" disks with labels, fully guaranteed	£11.95
25 bulk disks as above	£27.95
10 disks as above with plastic case	£13.95
25 disks as above, with 40 capacity lockable storage unit	£34.95
Kodak DS/DD 3.5" disks, top quality storage media. Box of 10	£17.95

How to order from  
**Evesham Micros**



Phone us with your  
ACCESS or VISA  
card details on :  
**0386-765500**

### vortex system 2000 hard disks

Now available - Vortex 'System 2000' hard disks, offering versatile high-capacity storage, suitable for use with the Amiga 500 and Amiga 1000. The units are of a high specification, with a formatted capacity of over 42Mb and an average access time of 45Ms. The system consists of a hard disk base unit, cables and an Amiga interface module, with utilities software including an autoboot facility and a hard disk backup utility.

System 2000 40Mb Hard Disk package ..... £529.00

### PRINTERS

All prices include VAT/delivery & cable

**LC10**



**star**  
We use and recommend Star printers since they offer an unbeatable combination of features, print quality, reliability and value. Make the sensible decision - get it right with a Star printer at our special all in. prices.

**Only £189.00**

Colour version also available,  
**Only £239.00**

Prices include 2 extra black ribbons free of charge.

Star LC24-10 feature-packed multifont 24pin printer	£319.00
Star SF-10DJ / DK cut sheet feeder for LC-10 / LC24-10	£64.95
Star NB24-10 24 pin printer 216/72 cps, including cut sheet feeder and 2 extra ribbons	£499.00
Star NX-15 good value wide carriage 9pin printer	£329.00
Panasonic KXP1081 reliable 9pin 10" printer 120/24 cps	£169.00
Panasonic KXP1180 super new 9pin multifont 11.7" carriage	£199.00
Panasonic KXP1124 good quality new multifont 24pin	£319.00
Panasonic KXP-37 cut sheet feeder for KXP1180	£95.00
Panasonic KXP-36 cut sheet feeder for KXP1124	£109.00
Epson LX800 popular 9pin 10" 180/25 cps	£199.00
Epson LQ500 24 pin 10" 150/50 cps	£319.00
Epson EPX-200 cut sheet feeder for LX800 / LQ500	£74.95
NEC P2200 budget 24 pin 168/56cps	£319.00
Citizen 120D budget 9pin 10" 120cps	£139.00
Citizen HQP-45 bargain value wide carriage 24pin	£399.00
Mannesmann-Tally MT-81 9pin 130/24cps	£149.00

### Now available - Our New Low-cost 5.25" External Floppy Disk Drives

We are now supplying the new, good quality RF542C 5.25" floppy drive compatible with the Amiga. Quiet in operation, the unit is colour matched to the Amiga, and has a throughport connector. The drive is capable of a number of configurations including 40/80 track switching and 360/720K format, giving full 'Transformer' compatibility.

**Only £114.95**  
including VAT & delivery

**Project D**  
disk backup utility

Probably the best and most complete 3.5" disk copier for the Amiga user. Can even copy MS-DOS, Atari ST, CP/M, Xenix and Archimedes disks. Because of the high specification of the Amiga drive, this copier is probably the best for the Archimedes or ST. Also includes track editor.

**ONLY £34.95**

**DOUBLE TAKE!**  
**PYE**  
**TV/MONITOR**  
(MODEL 1185)

High quality medium resolution colour TV/monitor now available to suit the Amiga. Features teletext, full Infra-red remote control, SCART connector, Video/Audio Input and headphone output connectors, 39 tuner presets, external aerial connector and a loop aerial. Supplied with connection cable.

**ONLY £269.00**  
includes VAT, cable and next day delivery

All prices include VAT and delivery. Express Courier delivery £5.00 extra.

Send cheque, Postal Order or ACCESS/VISA card details

**Evesham Micros Ltd**  
63 BRIDGE STREET  
EVESHAM  
WORCS WR11 4SF  
**0386-765500**  
fax 0386-765354  
telex 333294

Govt., educ. & PLC orders welcome  
Same day despatch whenever possible  
All goods subject to availability, E&OE.  
Open to callers 6 days, 9.30-5.30  
Also at: 1762 Pershore Rd., Cotteridge, Birmingham B30 3BH Tel: 021 458 4564

YOUR Am  
regularly  
and your  
indulging  
with Delu  
fantasies w

It is ti  
given a p  
thing is a  
2000 driv  
is an ama  
under bot  
runs inc  
stores 40  
complete  
utilities A  
seen, th  
proved p  
Britain's  
houses. .

If you  
bought a  
thing to  
love you  
2000 wo  
But you  
paying a  
yes, a ce

In fact  
prize co  
Ideal Har  
derful hu  
SIX Sys  
prizes. A  
stand a c  
of these  
questions  
to us.

(1)  
A  
w  
ha  
(2)  
e  
e  
d  
(3)  
a

YOUR Amiga has a hard life, regularly saving the universe and your valuable data files, indulging your artistic fantasies with Deluxe Paint – and other fantasies with Teenage Queen.

It is time your Amiga was given a present, and the ideal thing is a hard disc. The System 2000 drive from Ideal Hardware is an amazing unit. It autoboots under both 1.2 and 1.3 Kickstart, runs incredibly quickly and stores 40 meg of data. Supplied complete with the easiest to use utilities *Amiga Computing* has seen, the System 2000 has proved popular with many of Britain's leading software houses.

If you went into a shop and bought a drive, a pretty sensible thing to do – your Amiga will love you for ever after, a System 2000 would cost you £573.85. But you can win one without paying a cent – 19p for a stamp yes, a cent no.

In fact this is no measly one-prize competition, the chaps at Ideal Hardware being truly wonderful human beings are offering SIX System 2000 drives as prizes. All you have to do to stand a chance of winning one of these is answer five simple questions and send in the form to us.

# The ideal present

# WIN 6

## HARD DISCS



### Rules

- (1) The first SIX correct entries opened in the *Amiga Computing* office on September 1, 1989, will win one of Vortex fabulous System 2000 hard disc drives.
- (2) You may photocopy the form, but only one entry is allowed per reader. Anyone found entering more than once will have ALL entries disqualified.
- (3) Employees of Database Publications or their associated companies may not enter.
- (4) The editor's decision is final.

1 <input type="checkbox"/>	Name .....
2 <input type="checkbox"/>	Address .....
3 <input type="checkbox"/>	.....
4 <input type="checkbox"/>	.....
5 <input type="checkbox"/>	Postcode .....

**Send to:** Amiga Computing, North House,  
78-84 Ongar Road, Brentwood, Essex CM15 9BG.

1. Ideal Hardware import and support the System 2000 hard drives. Where are they based?  
(A) Surrey  
(B) Manchester  
(C) Glasgow
2. The System 2000 uses a special device which allows the drive to be used with different computers. What is this device called?  
(A) A SCSI interface  
(B) A Personality Module  
(C) Disc support unit
3. The hard disc, sometimes called a Winchester, was invented by  
(A) Charles Babbage  
(B) IBM  
(C) Sir Clive Sinclair
4. The System 2000 was designed by a company called Vortex. Which country is Vortex in?  
(A) Germany  
(B) England  
(C) Canada
5. Which special file is used by the Vortex System 2000?  
(A) Vmountlist  
(B) Startup-Sequence  
(C) Narrator.device

JAGGEDNESS won't do when you've a quality publication to run. Just imagine if your *Amiga Computing* was full of grainy pictures. What do you mean, it's like that already? If it was, nobody would take it seriously, or at least no more seriously than it's taken now. So the difficulty of producing computer artwork is in eliminating the inherent pixelation.

Graphics on the Amiga are great as far as they go, which admittedly is a fair old distance. Like 99 per cent of all known computers, Amy uses raster scan graphics, allowing a large number of colours in a high resolution with a low memory overhead. This produces lovely on-screen effects, but when magnified they can appear blocky. Unless you use some very cunning smoothing techniques, lines will appear jagged when output to a printer.

In much the same way as the old Asteroids machine worked, objects can be defined on screen by a series of points. No matter how much they rotate or enlarge, they keep their smoothness. This is not strictly

possible on the Amiga, not unless someone has produced an advanced vector scan graphics system for us and hasn't said anything. With Professional Draw though, it's the output that is important.

ProDraw lives on two discs and is accompanied by a 128 page manual. It needs a meg and one drive minimum. The program disc is virtually a full Workbench 1.3 distribution disc, complete with all the improved printer drivers.

biggies might buy you one, cable extra.

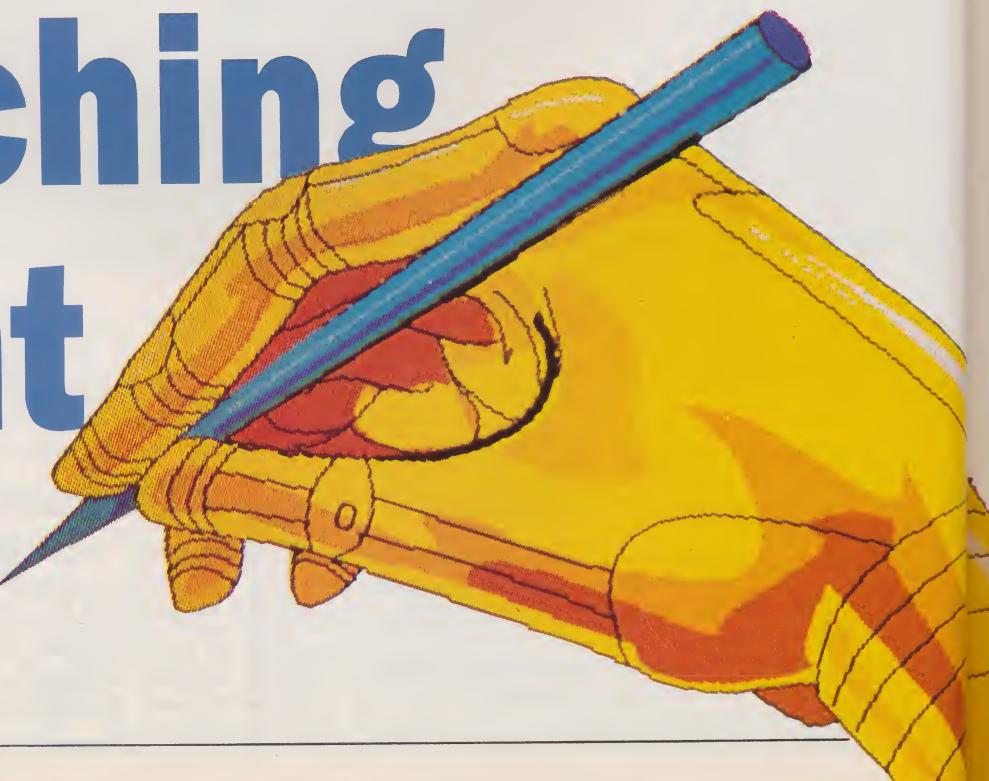
Hiding behind an outrageously large icon is the 270k main program. Default display mode is interlaced, so either change it pronto or don the Polaroids to cut down the painful flicker. The default mode is also the most memory hungry because all pictures are shown as wysiwyg in colour. The menu bar allows this to be changed, plus the defaults can be reset using Info's Tool Types once you've decided which settings suit you.

The right-hand side of the screen contains all the tools and gadgets that ProDraw has to offer. Initially it may seem quite limiting that there are only six drawing and six editing tools, but each is very versatile.

The Pen tool creates bezier curves and straight lines. Beziers are defined by two points and an initial curve gradient, consequently a low drain on ram. They are initially a real pain to get right because their formation isn't naturally intuitive, but the smooth curves produced once they have been mastered are worth any amount of

**O**UTPUT is either to a Preferences graphics printer or to a PostScript page printer. PostScript, which was developed over there by Adobe Systems, is a method of describing objects on a page for typesetting. Rather than being a control code based system, it is an English type language. Mid-range laser printers speak it, as do vastly expensive Linotronic 2400 dpi machines. If you feel the urge for a Linotronic coming on, you'll need another couple of mortgages first - 70

# Like watching paint dry



*What would you draw with an art program that offers the finest quality your printer can deliver? Stewart C. Russell drew a blank*

cursing.

The Text tool can produce two fonts, Times and Univers, from 24 point (third of an inch) to 144 point (two inch) at any angle. Each character is built up from a series of beziers, so a full set takes up well over 100k – very tight on a one meg system.

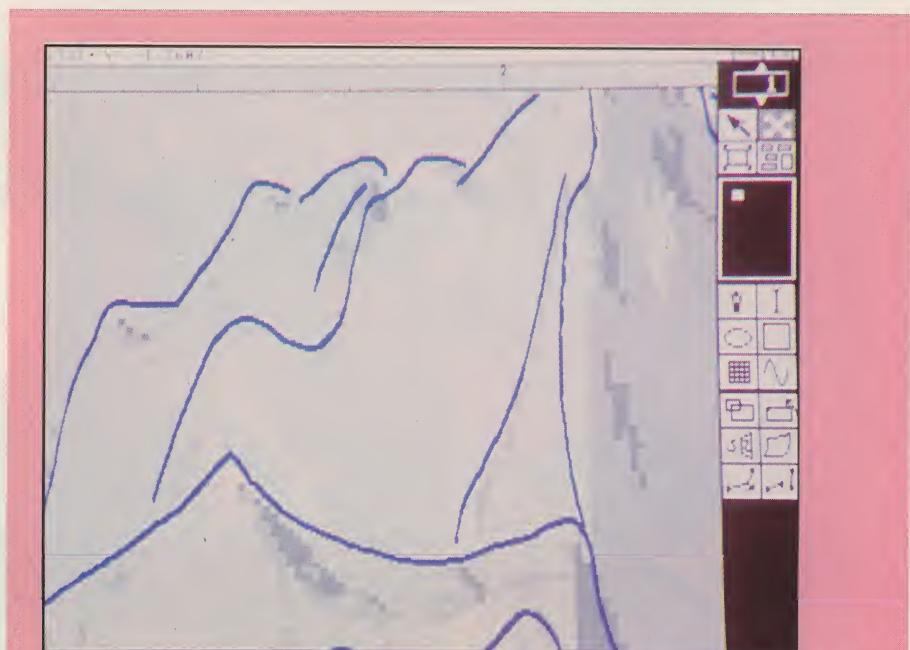
Gold Disk really intends ProDraw to be a companion program to its Professional Page DTP package, which handles fonts quite a bit better. Still, the two typestyles are very plain, and something like Gothic would have been nice to see.

**T**HREE of the tools produce pretty much what you'd expect from their icons – Ellipse, Rectangle and Rectangular Grid. The final tool, Freehand Bezier, is a boon for people who can't draw curves smoothly. It takes a curve traced by the pointer and smooths it according to the number of direction changes made. This tool, when coupled with ProDraw's ability to import bitmaps as tracing templates, allows artistic no-hoppers like me to produce bearable artwork.

The bitmap is converted from a multiplane, multicolour image into a four grey-scaled representation the width of the page. ProDraw doesn't seem to keep a copy of this reduced form in ram on a one meg machine, so zooms cause very lengthy recalc periods. Sometimes the wait can seem so long that AmigaDOS 1.6 will be released by the time it's finished, especially with a 32-colour bitmap. Stick to two-colour or four-colour bitmaps and all is sweetness and light. Nearly.

**T**HE six editing tools are immensely powerful, occasionally at a price. Object-described graphics take up a lot of space, so many thousands of relatively simple calculations need to take place after every movement.

Objects, or groups of objects, can be resized using a fairly speedy process. If colour wysiwyg mode is selected the screen is redrawn a couple of times, slowing affairs down a tad. The Rotation tool allows faultless rotations to take place about a point.



A bitmap imported from a fractal scenery generator



The right-hand side of the screen contains all the tools and gadgets

# PIONEER

# PLAQUE



ONLY  
available on  
the Amiga:  
**£24.95**

**Pioneer Probe Mk IV – a self-replicating robotic spaceship – is out of control, destroying all life as it travels from planet to planet in the Starion Cluster. Your mission is to stop the spread of the plague before it's too late.**

- Drone flight patterns that you can program to soak up energy from the city below
  - Carefully-designed instrument panel – to help you plan your strategy
  - Your performance analysed to show your strengths and weaknesses
  - Dazzling HAM-mode graphics: 4,096 on-screen colours
  - Eight-directional scrolling over a detailed cityscape
  - Stereo music score and digitised speech

- Eight-directional scrolling over a detailed cityscape
- Stereo music score and digitised speech

***AWESOME action for your Amiga!***

# MANDARIN SOFTWARE

In association with  
**TERRIFIC**  
SOFTWARE

**Europa House, Adlington Park,  
Adlington, Macclesfield SK10 4NP.**

The first  
Hold-and-Mou-  
se game for the Amiga  
- 4,096 on-screen colo-

*Destroy hostile probes as they rise up out of their silos*

*Choose your next course of action in the Control Room*

*Arrive in the nick of time at  
one of the infected planets*

*Spear a Gravity Well to escape from Sub-Euclidian Space*

Create Drone patterns  
and save them onto disc

Please send me Pioneer Plague for the Amiga.

- I enclose a cheque for £24.95 made payable to Mandarin Software
  - Please debit my Access/Visa number

9828

Expiry date  
/ -

Signature

Name .....

Address .....

.....

Postcode .....

**Send to:** Database Direct, Treepost, Encounters Ltd,  
South Wirral L65 3EB. Tel: 051-357 2961

Postage: Add £2 Europe/Overseas £5

AMC8

The first  
Modem  
for the Amiga  
in green colours

If there are many points – as in a font character – the process is irritatingly, though understandably, slow.

By far the most powerful editing tool is Distortion. A selected group of objects is enclosed in a rectangle, which can be stretched and bent as much as you want. A gentle touch of the spacebar sets the Distort algorithm churning into motion. Depending on what mode you're using, whether there's a bitmap template visible and the number and complexity of the objects, this process can be almost instant or can take two to three minutes. This is bad if you decide that you need to tweak it a bit more – another two-minute wait ensues.

The manual makes no mention of the amount of calculation that is going on in every edit. A little paragraph would certainly not go amiss to the effect that the user might be a little more sympathetic to the developer's plight. But ProDraw is touted as a professional package, and in that respect should live up to it. Even moving the Null pointer – the basic system pointer – about the screen produces momentary Zzzzs.

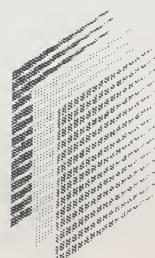
ProDraw needs its manual since so many of the commands are not immediately obvious. There is a good tutorial section and a very good condensed reference section in the back for advanced users who can't quite remember how to access the more obscure commands. Most of the menu bar commands can be accessed using Ctrl+key or Alt+key combinations, so muriphobes are well catered for.

**G**RAPHICS packages may have all the features in the world but can be spoiled by an appalling front end. ProDraw uses the standard Intuition environment to a laudable degree and the manual gives a very good description of each of the tools and gadgets. It might take a couple of extended sessions to get it working properly, but all the cursing and head-scratching will be worthwhile.

One thing a professional package should not do is Guru – sometimes ProDraw runs out of ram and gives a custom recoverable alert, sometimes it meditates for no adequately explained reason.

A major crime in the manual is that it doesn't tell you about the online context sensitive help. This function,

# PROFESSIONAL DRAW



## GOLD DISK

*The Text tool can produce Times and Univers from 24 up to 144 point*

accessed via the Help key, will produce a useful screen of the options currently open to the user and a brief summary of what each does. You'll still need the manual, but it will save shifting the pile of floppies which forms over every open computer manual.

Will ProDraw allow the artistically inept to produce fabulous pictures? The short answer has to be no. In the same way a word processor does not instantly bestow on the user the literary skills of a great author, ProDraw won't put you in the Salvador Dali league.

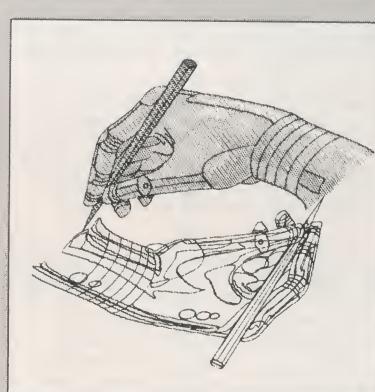
The program has extensive support for clip art. Unfortunately only three

clips come with the package, so unless Gold Disk produces some clip art discs, it's build-your-own time. This is easy enough to do, but a little more help would be appreciated. Friends could be won and people influenced if Gold Disk expanded this, and the fonts, section.

ProDraw's most notable feature – and the one which will sell it – is that all illustrations are saved in Encapsulated PostScript Format (EPSF). Many "real" publishing programs talk EPSF, such as Aldus Pagemaker and Xerox Ventura Publisher, neither of which have hit the Amiga. PostScript handles colour separation if your printer can, but it will be of more use to those with a phototypesetter.

Colours can be described using rgb values or by yellow magenta cyan (ymc, as used in printing) which can either appear as a close approximation of rgb or can be set to the user's preference. This allows colours which are similar to be discernably different on the screen. Little touches like this show that useful research went into the planning.

If a printer can produce graphics, ProDraw will probably support it. It has the full complement of Preferences 1.3 printer drivers plus all



*This dump was produced by a 24 pin Epson LQ-500*

the smoothing and dithering parameters. Since my Linotronic 300 with raster processor and furry dice is in for repair (cough) I had to make do with my trusted though not altogether fast Amstrad DMP2000 Epson compatible.

Results were as good as can be expected, and it certainly didn't hang around. This speed increase is effected by ProDraw splitting the image into horizontal strips, translating from objects to bitmaps and outputting the results via a standard driver. The only slight glitch here is that ProDraw doesn't always calculate the number of strips correctly. So if it says five strips, sometimes it really means six. This in no way impairs the output, but is a little disconcerting.

**T**HERE is nothing in the package that doesn't work in the way that Gold Disk meant, it's just that some of them are unbearably slow. If

I was very forgiving I'd put all ProDraw's faults down to the fact that the copy reviewed here is v1.0. Gold Disk claims unlimited telephone support and a newsletter, but the economics of supplying them from Ontario to the UK are likely to shy away all but very rich people.

The program would certainly benefit from at least two or three megabytes of ram and possibly a co-processor to speed up calculations. Currently it runs at well under the speed of the behemoth AutoCAD on the utterly pedestrian PC. Those who know how quickly AutoCAD redraws the screen will feel a homecoming with ProDraw.

It will happily import and export pages from and to Gold Disk's ProPage, but only versions greater than or equal to 1.2 because earlier ones don't support EPSF. The Amiga has yet to gain full acceptance with the DTP crowd, who currently seem rather besotted with Macs.

With a bit of a rewrite to increase the speed, and some more fonts, this package could become a serious

contender and really merit its "Professional" title. In its current form, despite the relatively low price, ProDraw is just too slow.

## REPORT CARD

Professional Draw  
HB Marketing  
£139.95

EASE OF USE .....  
Good results need practice and lots of thumbing the manual. Handy online help. Capable of professional quality colour separations.

SPEED .....  
Bring a pillow and a good book, translations can take several minutes.

VALUE .....  
Worth it if you need high quality output often, but too costly for the occasional flyposter. Perhaps a little cavalier with ram.

OVERALL 64%

Professional by name and by output quality. Rewarding to use, but the irrational snooze periods will annoy all but the very patient.



## AMIGA COMPUTING Mail Order Offers

### Don't miss these back issues

February 1989 issue

Shoot-em-up construction kit. New series on Basic and machine code. Digita's Mailshot takes the pain out of postage. Datei sampler sounds off, but a magic box will make the Amiga sound much better. E-type – the typewriter emulator – filed under WPB. A cheap but great modem from Amstrad. K-Gadget – programmers' friend or fiend? Best Amiga toy yet – the Microtext teletext adaptor.

March 1989

Hisoft Basic Compiler undergoes a speed trial. Deluxe Print shows its colours. A listing in C to scan a disc for IFF pictures. Dragon's Lair review and play tips. Programming functions in Basic. What went on at the Developers' Conference in Germany. Max the Hacks shows how to win at Rocket Ranger, Roger Rabbit, Out Run and Elite. Jez San puts the official Commodore speed-up board through its paces.

April 1989 issue

Big Screen Hero – we can't take our eyes off the monitor with a 1008 x 1008 resolution. Triangle TV, the company which married the Amiga to commercial video, tells its tale. Gen up on genlocks – we look at the four main contenders.

Superplan, the businessman's ménage-à-trois flexes its muscles. Zoetrope, animation at a price. Amigas by accident – we meet the Burocare think-tank.

May 1989 issue

Gold Disk's MovieSetter – cartoon capers on-screen. GFA Basic roasted, The Amiga Show in the Big Apple. Prettier icons with Icon Paint. Opus-1 plays specialist music. Learn how to use functions from Basic and the Move command from machine code. Sam Littlewood looks at the different forms of ray tracing and rendering. TR Sketch dragged to the trashcan. WordPerfect Library fares a little better. Plus a mega collection of games including the earth-shattering Populous and the truly cosmic Cosmic Pirate.

June 1989 issue

Deluxe Paint III – the number one art program gets better with animation. Scorpion heads up the games. The Aprodraw graphics tablet, using lines from Basic. Sculpt-Animate 4D reviewed – a bargain at £400? The best of the Public Domain and the CMI processor accelerator run through its paces at 14MHz.

July 1989 issue

Exclusive review of Commodore A590. X-Cad designer, the Amiga program which leaves AutoCAD in the shade. Pagestream – quality DTP on a low budget. Essential tips on how to make more room on your Workbench disc. Musical scores ten out of ten with Dr. T's Copyist Professional. Teaching is more important than Education, a look at Amiga's in schools. Plus a packed games review section.

TO ORDER PLEASE USE THE FORM ON PAGE 95



## Public Domain Software

Mega Packs consist of 3 disks for only £6! fully inclusive!

- ◆ Mega Pack 1: Business Pack 1, word processor, database, spreadsheet.
- ◆ Mega Pack 2: Communications Pack 1, 3 disks full of telecommunication software.
- ◆ Mega Pack 3: Graphics Pack 1, graphics packages and utilities.
- ◆ Mega Pack 4: Animation Pack 1, stunning graphic animation demos.
- ◆ Mega Pack 5: Picture Pack 1, packed full of the best Amiga pictures.
- ◆ Mega Pack 6: Demo Pack 1, the most fabulous graphics and sound.
- ◆ Mega Pack 7: Amiga Basic Pack 1, 3 disks full of Amiga Basic programs.
- ◆ Mega Pack 8: Game Pack 1, adventures, board games and shoot 'em ups.
- ◆ Mega Pack 9: Picture Pack 2, packed full of the best Amiga pictures.
- ◆ Mega Pack 10: Demo Pack 2, the most fabulous graphics and sound.

For our full catalogue of Amiga public domain software send a medium sized stamped self addressed envelope. Make cheques and postal orders payable to **Purple P.D.**. Send Visa or Access card details to:

**Purple P.D.** 1 Bartholomew Road, Bishop's Stortford, Herts, CM23 3TP.  
Telephone 0279 757692.

The best-selling STOS - The Game Creator for the Atari ST has now been totally rewritten to bring out the maximum from your Amiga.

- ▶ Animate up to 48 software sprites and 32 hardware sprites on screen at once ▶ Define separate screen scrolling areas ▶ Program the copper list with ease ▶ Professional design environment: Lockable procedures, no line numbers, sophisticated scrolling editor... and much more! (Release date: October).

More details from: AMOS Information, Mandarin Software, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

## TWO WAYS TO ENSURE YOU GET



1. Complete and mail subscription form on Page 95
2. Hand this form to your newsagent.

Please reserve me a copy of Amiga Computing magazine every month until further notice.

- I will collect  
 I would like it delivered to my home.

Name \_\_\_\_\_

Address \_\_\_\_\_

Note to newsagent: Amiga Computing should be obtainable from your local wholesaler, or contact Circulation Manager on 0424 430422



10 Petersfield Avenue, Slough, Berkshire SL2 5DN  
Tel: 0753 35557 Fax: 0753 511122

**Conditions of sale**

- \* All prices exclude VAT and delivery charges
- E&OE all prices subject to change without notice
- All collections made by prior arrangement from our warehouse
- Please add £1+VAT for consumables and £5+VAT for all other items for 3 working day delivery

AMIGA HARDWARE			
A500 Complete .....	312.00	Epson FX850 .....	283.00
A500+TV Modulator .....	324.00	Epson FX1050 .....	377.00
A500+£200 worth games .....	335.00	Epson EX800 .....	425.00
A500+10845 H/Res Col. ....	520.00	Epson EX1000 .....	581.00
A500+Philips Med. Col. ....	489.00	Epson LQ500 .....	249.00
AMIGA ACCESSORIES		Epson LQ850 .....	404.00
A501-512K Ram .....	113.00	Epson LQ1050 .....	542.00
TV Modulator .....	22.00	Hewlett Packard	
Mouse Mat .....	4.00	Thinkjet .....	265.00
DATAPLEX DRIVES		Quietjet .....	343.00
1MB 3.5" External Drive .....	68.00	Quietjet+ .....	412.00
1Mb 3.5" Internal Drive .....	63.00	Deskjet .....	443.00
2Mb 5.20" Floppy Drive .....	106.00	Deskjet + .....	535.00
DATAPLEX HARD DRIVES		Paintjet .....	665.00
20Mb Drive A500/1000 .....	476.00	Rugged Writer .....	865.00
30Mb Drive A500/1000 .....	529.00	All Hewlett Packard Printers come with 12 months onsite warranty	
60Mb Drive A500/1000 .....	910.00	Star LC10 Mono .....	153.00
20Mb Drive A2000 .....	470.00	Star LC10 Colour .....	195.00
30Mb Drive A2000 .....	779.00	Star LC24-10 .....	252.00
Please ring for other capacity drives		Seikosha SP180 9pin 80 col 100cps F/T ..	105.00
PHILIPS MONITORS		Seikosha SP1200 9pin 80 col 120cps F/T ..	119.00
CM8033 14" RGB/CVBS Mon .....	189.00	Seikosha SP180 AI 80 col, 24 pin .....	224.00
CM7723 14" Amber Monitor .....	89.00	NEC P220 .....	265.00
CM8852 Hi Res Col Mon .....	249.00	NEC P656XL .....	814.99
PRINTERS		NEC P6+80 Character .....	414.00
Amstrad LQ3500 DI .....	244.00	NEC P7+136 Character .....	534.00
Amstrad DMP4000 .....	227.00	Colour Upgrade Kit .....	80.00
Amstrad LQ5000 DI .....	329.00	Panasonic KXP1081 .....	128.00
Brother HR20 Daisywheel .....	318.00	Panasonic KXP1124 .....	249.00
Brother HR40 Daisywheel .....	688.00	Sheetfeeder .....	89.00
Quendata DWP1120 16cps .....	169.00	Panasonic KXP1180 .....	165.00
Canon PJ1088 Inkjet Col. ....	420.00	Panasonic KXP1192 .....	253.00
Dot Matrix Range		Panasonic KXP1195 .....	344.00
Citizen 120D .....	110.00	Panasonic KXP1540 .....	428.00
Citizen 180E .....	127.00	NEW Mannesmann Tally Launch Offer .....	
New 24pin Swift 24 .....	255.00	MT81 (Dot Matrix) .....	110.00
Colour upgrade for Swift .....	P.O.A.	Sheetfeeder .....	62.00
Citizen MSP 15E .....	188.00	Serial I/F .....	62.00
Citizen MSP 40 .....	228.00	NEW Colour Printer from Olivetti .....	
Citizen MSP 45 .....	252.00	DM105S .....	189.00
Citizen MSP 50 .....	292.00	NEW Mannesmann Tally Inkjet (black) The MT90 .....	
Citizen MSP 55 .....	322.00	at only .....	375.00
Citizen Premier 35 .....	364.00	Optional sheet feeder .....	99.00
Citizen HQP 40 (last few) .....	295.00	RIBBONS .....	
Citizen HQP 45 (last few) .....	295.00	Various ribbons in stock, please call for prices.	
All Citizen printers come with 2 year warranty .....	153.00	Professional repairs carried out .....	
Epson LX800 .....		Another branch opening shortly .....	

## NEW FOR YOUR COMMODORE FROM TRILOGIC!

### AMIGA AUDIO DIGITISER

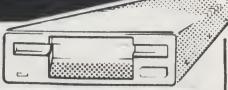
— NEW, CHOOSE MONO OR STEREO VERSION

Both Amiga audio digitisers give superb performance, unsurpassed at the price. No software is supplied, since they are fully compatible with Perfect Sound, Prosound Designer, Audiomaster, and Datel's Prosampler. Sampling rates up to 60KHz are possible depending upon the software. An audio lead is supplied for connecting to the headphone socket or line output of a radio, personal stereo, keyboard etc. Full instructions are included, and the mono version also has an L.E.D. overload indicator. A public domain "Sound Workshop" disk is available which has demo versions of Audiomaster & Perfect Sound etc.

MONO DIGITISER ..... £27.99 POST FREE      STEREO DIGITISER ..... £37.99  
SOUND WORKSHOP DISK ..... £4.99 POST FREE IF PURCHASED WITH DIGITISER  
ADAPTOR FOR A1000 ..... £2.00

### EXTERNAL 3.5" DISK DRIVES

- 880K FORMATTED CAPACITY
- THROUGH POST
- SLIMLINE STEEL CASE
- VERY QUIET OPERATION
- LOW POWER CONSUMPTION
- 3.5" DRIVE WITH ON/OFF SWITCH ..... £79.99 POST FREE



### AMIGA MONITOR & PRINTER LEADS

#### RGB TV & MONITOR LEADS

We have leads to connect all AMIGAS to your TV or colour monitor provided it has an RGB input socket. All leads give a much clearer picture than using the AMIGA MODULATOR, permit ALL 4096 colours to be displayed and include the audio lead (to give stereo with stereo tv's).  
ORDER AL 1 FOR TV'S WITH 21 PIN EURO (SCART) SOCKET.  
FITS PHILIPS, FIDELITY, SONY, GRUNDIG, NORMENEDE, ETC ..... ONLY £9.99  
ORDER AL 2 FOR FERGUSON TV's WITH 7 or 8 PIN DIN SOCKET.  
MODELS MC01 & MC05, ETC ..... ONLY £9.99  
ORDER AL 4 FOR HITACHI & GRANADA TV's WITH 7 PIN DIN SOCKET. MODELS CPT1444, ETC ..... ONLY £9.99  
AMIGA TO MULTISYNC MONITOR (analogue RGB) AL11 ..... £9.99



#### MANY OTHER AMIGA MONITOR/TV LEADS LISTED IN OUR FREE CATALOGUE.

OUR LEADS ARE GUARANTEED TO WORK WHERE OTHERS DON'T!

LEADS ALSO AVAILABLE FOR ATARI ST RANGE. PLEASE CONSULT US IF IN DOUBT.

### NEW — MONITOR SHARER

#### SHARE 2 COMPUTERS WITH ONE TV/MONITOR

Plug-in the scart leads from any two computers eg AMIGA & ST, and connect the SHARER to the tv or monitor's scart socket. Just press the switch to instantly select either computer ..... MSWI £15.99



### OTHER LEADS

AMIGA 64 EMULATOR LEADS.....	AEL 1 ONLY £4.99
MODULATOR EXTENSION LEADS.....	MEL 1 ONLY £8.99
AMIGA PRINTER LEAD — Parallel Type 1.5M long.....	AMP 1 ONLY £6.99
3.0M long.....	AMP 3 ONLY £9.99
AMIGA A500/BBC EMULATOR LEAD .....	BE1 ONLY £7.99
AMIGA A500 TO SERIAL (RS232) PRINTER 1.5m.....	RS1 ONLY £9.99
AMIGA A500 TO MODEM (25W 'D') 1.5m.....	RS6 ONLY £10.99
AMIGA NULL MODEM LEAD — LINKS TWO A500s 1.5m.....	RS5 ONLY £7.99
AMIGA TO HIFI LEAD 3m 2 PHONO PLUGS EACH END .....	HL1 ONLY £4.99
AMIGA TO HIFI LEAD 5m 2 PHONO PLUGS EACH END .....	HL2 ONLY £5.99

OTHER LENGTHS OF LEAD AVAILABLE — PLEASE SEE OUR CATALOGUE

EXTERNAL DRIVE SWITCH FOR DF1 ..... ADE3 ONLY £8.99  
EXTERNAL DRIVE SWITCH FOR DF1 & DF2 ..... ADE4 ONLY £10.99

PLEASE STATE WHICH AMIGA YOU HAVE WHEN ORDERING

### MOUSE/JOYSTICK SWITCHER

- NO MORE UNPLUGGING MOUSE WHEN JOYSTICK REQUIRED
  - EXTENDS THE PORT FOR EASIER ACCESS
  - SAVES WEAR & TEAR ON THE MOUSE PORT
  - PUSHBUTTON SWITCH CAN BE OPERATED WHEN THE COMPUTER IS ON
- A VERY USEFUL GADGET — ONLY £10.99 order as DJA1



### AMIGA MINI STEREO AMPLIFIERS

MINIAMP 2 combines a mini stereo power amp with two neat speaker units which connect directly to your AMIGA. They are ideal for use with mono TV's & monitors, & simply plug in for instant stereo sound. You'll be amazed at the difference.  
MINIAMP 2 WITH REMOTE VOLUME CONTROL & ALL LEADS ONLY £19.99  
MINIAMP 4 comprises separate 4 watts per channel high quality mini stereo amplifier with loudspeaker/headphone socket, separate speaker units with 4" twin cone drivers, mains power pack & connecting lead for AMIGA. CAN BE USED AS 'WALKMAN' BOOSTER & WITH OTHER COMPUTERS  
MINIAMP 4 STEREO AMPLIFIER SPEAKER SYSTEM ..... MA4 £34.99  
MAINS POWER PACK FOR MINIAMP 2 ..... MPP1 £5.99  
LIGHTWEIGHT QUALITY STEREO HEADPHONES ..... SHP1 £5.99



### NEW — AMIGA MIDI INTERFACES

MIDI INTERFACE 1 FOR A500/2000 OR A1000 ..... MIF1 £29.99  
This has MIDI IN,OUT & THRU sockets. Self powered.  
MIDI INTERFACE 2 FOR A500/2000 OR A1000 ..... MIF2 £34.99  
This has MIDI IN, MIDI OUT, MIDI THRU plus 2 UNIQUE switchable MIDI OUT/THRU SOCKETS to save you having to swap MIDI leads when using more than one MIDI instrument. Self powered.



### SUNDY ITEMS — BARGAIN PRICES

SONY 3.5" DISKS 100% Guaranteed DS/DD disks  
Lowest Prices ... Per 10 £12.99 & Postage      Lowest Prices ..... Per 25 £28.49 Post Free  
Lowest Prices .... Per 50 £55.99 Post Free      Lowest Prices .... Per 100 £99.99 Post Free  
3½" DISK BOX FOR 50 DISKS. SMOKED LID, LOCKABLE, DSB4 ..... ONLY £8.45  
3½" DISK BOX FOR 100 DISKS. SMOKED LID, LOCKABLE, DSB6 ..... ONLY £12.49  
A500 DUSTCOVER. ANTISTATIC TYPE, ADC1 ..... ONLY £4.99  
A4 NON-SLIP MOUSEPAD, AFM1 ..... ONLY £4.99

WE ALSO STOCK AMIGAS, PCs, PRINTERS, MONITORS, HARD DISKS, MEMORY EXPANSIONS, VIDEO DIGITISERS, SELECTED SOFTWARE & BOOKS — PHONE FOR OUR FREE 20 PAGE CATALOGUE. TRADE ENQUIRIES WELCOME. Please add 75p post postage + packing to orders under £15.00

FREE CATALOGUE WITH ALL ORDERS      EXPRESS DELIVERY £1.99 Extra



TRILOGIC, Dept. A.C. Unit 1,  
253 New Works Road, Bradford BD12 0QP  
Tel 0274-691115      Fax 0274 600150

• FAST MAIL ORDER SERVICE • PROMPT DESPATCH • ALL PRICES FULLY INCLUSIVE PLUS 10 DAY MONEY BACK GUARANTEE ON ALL ITEMS. PAYMENT BY CASH, CHEQUE PAYABLE TO TRILOGIC BY POSTAL ORDER, ACCESS OR VISA. ADD £2.99 EXTRA FOR EXPORT ORDERS, PAYMENT IN STERLING ONLY PLEASE.

## VideoStudio FOR THE AMIGA



- "Comprehensive in its capabilities"
- "VideoStudio impresses greatly"

THE ZVP VIDEOSTUDIO PACKAGE IS A COMPLETE EASY-TO-USE VIDEO POST-PRODUCTION SOFTWARE UTILITIES SUITE, FEATURING:

- GRAPHIC SPECIAL EFFECTS
- TIME FUNCTIONS
- TEST FACILITIES
- TITLING
- ★ A choice from up to 4096 colours.
- ★ A library of Wipe/Fade effects and Border (mask) patterns for use with genlocked video.
- ★ Customisable, Station Clock and broadcast style VTR startclock.
- ★ A stopwatch with options such as day-and-date, frame display etc.
- ★ A suite of standardised test patterns with audio test tones. Eg. Crosshatch, Testcard, Greyscale etc.
- ★ A Main screen titler with multi-colour font operation.
- ★ A Scroll titler with smooth vertical and horizontal scrolling.
- ★ A Subtitler with colour Logo and text Cut, Fade and Print options.
- ★ 20 high-quality fonts, with Bold, Italic & Underline styles and Outline/ Drop-shadow rendering options.
- ★ Overlay over live video or over background picture files (IFF) generated by a paint package or a video digitiser/frame-grabber.
- ★ Importing/Exporting of Fonts to/from other packages.

VIDEOSTUDIO produces an interfaced output directly compatible with all VCR formats & TVs and may be used with or without a genlock. It requires an Amiga A500/1000 or 2000 computer with 2 disk drives and 1 Mbyte of memory.

VIDEOSTUDIO is available now for ..... £99

#### AMIGA GENLOCK DEVICES

Minigen (for the home user) ..... £115  
Rendale A8802 (For the pro/semi-pro) ..... £287  
G2 VideoCenter professional Genlock (The G2 is S-VHS compatible + has manual Faders/mixers - call for availability)

#### GENLOCKS + SOFTWARE

Minigen + Videostudio software ..... (save £22) £193  
Minigen + Video Generic Master Titling software ..... (save £5) £180  
(Video Master Software will run on an unexpanded A500)

Rendale A8802 + Videostudio ..... (save £47) £339  
Rendale A8806 Professional Studio Quality Genlock + Videostudio ..... CALL

AMIGA HARD DISKS  
Amdrive A500 30Mb ..... £399  
A500 20Mb hard disk (Autoboot) + 2Mb ram ..... CALL  
A590 20Mb hard disk (up to 2Mb Ram fitted) ..... CALL

Other Amiga products are available. Send Large SAE for details.

ALL PRICES INCLUDE UK VAT + P&P. Send PO/Cheques to:

## MAZE TECHNOLOGY

20 Woodlands Road, Walthamstow E17 3LE

01-520-9753

Mail order only

*Are you new to the Amiga, finding it difficult to harness the power of this amazing computer ?, then what you need is help from the largest group of Amiga enthusiasts in the world.....*



#### Members receive:-

- ★ Excellent discounts on software
- ★ Technical support and on line help
- ★ Superb hardware reductions
- ★ A bi-monthly newsletter of over 60 pages!
- ★ Access to a PD library of over 300 disks
- ★ Use of the groups Amiga only bulletin board
- ★ Discounts on books



# AMIGA



DON'T HESITATE - JOIN NOW and start to appreciate what Amiga computing is all about.

For further details write, enclosing a stamped addressed envelope to:

The U.K. Amiga User Group,  
66, London Road,  
Leicester. LE2 0QD.

Or Telephone :

Leicester (0533) 550993

**T**HERE have been many important landmarks in the development of computers. Apart from the obvious ones like the invention of the transistor and silicon chip, there is the modem, the hard drive, the high level language compiler, the multi-tasking operating system and the virus.

The amazing thing about the virus is that it is a program which can operate and duplicate itself without the consent of the user – a major step

which doesn't do anything much except pass control back to AmigaDos. The SCA virus hides itself in memory in such a way that it can survive Ctrl+Amiga+Amiga. When this happens it puts a copy of itself on the disc you reboot from, so it can spread slowly but surely through your floppy collection.

Since the virus causes no damage, you might never know about it if a message didn't come up after every 16 reboots. The exception to this is if

none of the above deficiencies. The only way to kill it is to turn the power off and on again. This is bad for the Amiga's electronics, but extreme measures are needed here. Leave the machine to cool off for about 20 seconds before turning it back on, boot from a guaranteed clean disc and Install every infected disc.

Like many modern viruses, Byte Bandit causes deliberate damage. When it first came out I instigated a policy of inspecting the boot block of every disc I got, looking for suspicious text.

About a week ago a virus got past my defences and infected five discs before I noticed it interfering with the system's operation. I tracked it down, disassembled it and named it the YH virus after one of the intelligible pieces of Ascii in its code.

Everyone else seems to be calling it the DASA virus after the other piece of intelligible Ascii in its code. OK, now I know that DASA and YH are suspicious text, but this sort of thing renders the old technique ineffective.

# Something wonderful has happened...

*When this message appears on an Amiga's monitor you know that the virus epidemic has infected you too. Russell Wallace traces its history and disassembles the mystery within the micro*

towards independent computer systems. Of course, the purpose of this article is not to extol the virtue of viruses, it's to tell you how they work and how to make sure they don't on your system.

The SCA virus was the first to appear on the Amiga, indeed among the first to appear anywhere. It is located on the boot block – sectors 0 and 1 of a disc – containing up to 1k of code which is executed on boot-up before the Amiga does anything else, including execute the Startup-Sequence.

The boot block isn't really of much practical use except for copy protection systems, but it's a great hiding place for viruses.

When you Install a disc you write some standard code to this block

the virus overwrites boot code that is being used for something like loading a game, which will make the disc unusable.

The SCA virus is pretty feeble by today's standards. It deliberately announces its presence and it only infects discs you boot from rather than every disc you put in the drive. Even when it's in memory and has control of the Amiga, it does nothing to stop you inspecting discs and killing the copies of it you find.

It can even be vaccinated against by SCA Protector, a program which puts a fragment of the virus code on the boot block to make SCA think the disc is already infected so it will not write itself to it.

The Byte Bandit virus is the next step up the evolutionary ladder. It has

So what can you do?

Nowadays you should examine the boot block with a sector editor – there are many in the public domain and I use SmartDisk. If the boot block corresponds byte for byte with an Installed disc – check the first 40 bytes and ignore the checksum in the second group of four – it's OK. If it's a recognisable virus take appropriate action. Otherwise boot it. If something like a title screen appears before or instead of the standard CLI window, it's probably OK, the strange boot code is doing something other than infecting your system.

If the CLI window comes up, the disc is suspect. Remove it from the drive, turn the power off and on again, boot up AmigaDos and sterilise the sick disc with the Install command. To avoid risk of a virus getting past your defences and infecting your CLI discs, have one disc that you never put in any drive except to boot up after power on. I use my original Workbench disc for this. A virus killer such as VirusX

will provide further protection.

There have been rumours of boot block viruses that can survive Install and viruses that can live on in the battery backed-up clock, even with the power off. I can assure you that this is theoretically impossible. To be executed on boot-up, a virus has to have some code in the first 40 bytes of the boot block, and these 40 bytes are erased by Install. And the Amiga never looks for executable code in the clock.

**T**HE method I have outlined will provide a virtually invulnerable defence against boot block viruses. So what other kind are there on the Amiga? Until recently there were none. Then came IRQ.

This stands out from the crowd in that it is not found in the boot block. Instead it attaches itself to executable programs, one of its prime targets being commands in your C directory.

You download or otherwise acquire

a new program which happens to be infected. You execute this program. The virus then attaches itself to memory by taking over a machine code vector. You run a program which, unbeknown to you, uses that vector.

IRQ opens your Startup-Sequence, picks the first filename it sees in it, sees if it's executable and, if it is, writes itself into that file. If the file is not executable, the virus will try to write to the Dir command file on that disc.

IRQ is mostly a harmless joke. It changes the title bar of the initial CLI window when you boot and it will try to write to any disc inserted, thus bringing up the *Volume whatever is write protected* requester whenever you insert a write protected disc. It will not kill commercial programs, it doesn't attack anything, it doesn't do anything malicious. It's not nice to have around, but it's certainly better than a rash of Byte Bandit.

Versions of VirusX 3.0 and greater will deal with IRQ and, funnily enough, this virus will not work

under Kickstart 1.3 – you will get *Software Error* requesters whenever you run an infected program. Another public domain program called KV – for KillVirus – will check a whole directory's worth of files for this specific virus.

Viruses like IRQ present a deadly threat to computer owners, particularly as hard discs are becoming more widespread. Some will gradually destroy data over many weeks so that by the time you've detected the cause of the damage hardly any of your files are intact, backups included.

The most important protection against viruses is paranoia. Inspecting and sterilising discs should be automatic, not something ever to be forgotten.

Always think of an unknown disc as a possible threat. This is the most important computer game of all. It's great fun killing viruses, and even more fun taking them alive and disassembling them. But the stake isn't a little blip at the bottom of the screen, it's your software and data.

*World of Flight*

Travel the globe with the best in simulation software; **UFO™**, **Flight Simulator™**, **ThunderChopper™**, **Jet™**, and **Stealth Mission™**. Discover the world with Scenery Disks, Flight Controls I, and other supplements to our integrated flight line!

UFO, Flight Simulator, ThunderChopper, Jet, Stealth Mission, and Flight Controls I are trademarks of SubLOGIC Corp. IBM screens shown. Other computer versions may vary.

**subLOGIC**



# Creating a model universe

*Forget the bikinis and bathing bimbos,  
Alastair Scott shows you that with  
AmigaBasic you can watch heavenly bodies  
which are out of this world*

MOST people think of Galileo as the inventor of the telescope, however it was invented in 1608 by a Dutchman, Hans Lippershey.

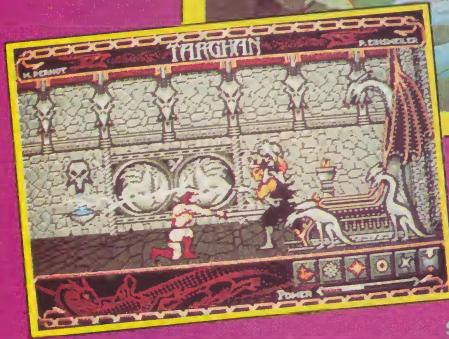
Exactly 100 years later history was equally unfair to George Graham, the inventor of an ingenious machine which displayed the motions of the planets around the Sun with correct velocities and periods of revolution.

Four years later John Rowley built a similar device for his patron Charles Boyle, Fourth Earl of Cork and Orrery, who took no part in its design or construction. It was eventually named after him.

This program simulates an orrery by using the laws of celestial dynamics. Given six variables which define the size, shape and orientation of a planetary orbit, these laws give the position of the planet relative to the Sun for any time you choose, taking just a few program lines to do so. You need to enter three pieces of information to get started – the three

WIN  
Second Drive  
and a year's supply  
of New Titles published by  
Ginstar NOW!!!  
LOOK BELOW FOR MORE  
INFORMATION

# TARGHAN



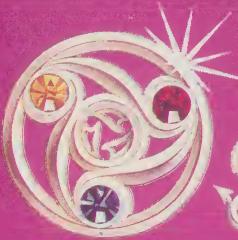
## Targhan

Far from Edengarhn is the castle of the evil one.

Far from your village, a lord keeps the secret, such a powerful lord that he cannot be human, a creature floating a world that dies and grows again . . .

**Targhan is probably the most stunning game you'll ever play.**  
Targhan is an adventure-action game with more than 120 landscapes and 40 different characters. The game is playable on either keyboard or joystick.

The game offers digitised sound and outstanding graphics. It will be released on Amiga, Atari and PC (EGA, VGA and CGA) by the end of May. The game will run on both colour and mono screens.



## Silmariils

Look for reviews in  
Commodore User,  
Popular, The One,  
C&VG, Ace,  
ZAP, The  
Games Machine  
and Amiga User  
International soon!

To enter our competition please send your warranty cards of TARGHAN and complete the following:

I like the game Targhan because .....

Send your entries to: UNIT 1 (Rear of 7), WELLINGTON ROAD, SANDHURST,  
SURREY GU17 8AW • (0252) 877431-879718 • Fax: (0252) 877431

Closing date September 1, 1989.

**GINSTAR**

DEAL  
ENQUI  
WELCOM  
SPEC  
DISCOUNT  
Distribu  
enqui  
welco

steps to heaven if you will:

- Due to the huge spread of sizes of their orbits, all nine planets cannot be displayed onscreen at once. Pressing I displays the inner planets – Mercury, Venus, Earth and Mars. Pressing O displays the outer planets – Jupiter, Saturn, Uranus, Neptune and Pluto.
- The date is typed in in the form dd,mm,yyyy. For example: 15,6,1989.
- The planets are displayed using "snapshots" separated by the step time. Use values of 3 to 10 days for the inner planets and anything more than 50 days for the outer planets.

Once these parameters are entered the screen clears, the Sun is drawn in the centre of the screen and the planets begin their gravitational waltz, which only ends when you press the Escape key.

A small diagram of Earth's position relative to the Sun appears simultaneously at the top left of the screen – useful for when you are studying the outer planets. The current date is continuously updated, it appears in red at the top right of the screen.

Holding down the left mouse button displays a window with the name of each planet visible, its angular displacement and its distance from the Sun in astronomical units: One astronomical unit (AU) is the average radius of the Earth's orbit, or roughly 93 million miles. Releasing the button removes the window and lets the show go on. Finally, Right-Amiga-S freezes the program until you press another key, and Right Amiga-fullstop returns you to AmigaBasic.

**S**TUDY the planets' motion for any appreciable amount of time and you will see many interesting features, the swifter inner planets overtaking the slower outer ones, the elliptical rather than circular shape of most orbits, particularly in the case of Mercury and Pluto and Pluto crossing and re-crossing Neptune's orbit. Try dates around 1999 for an example.

You can find the times when planets will be easily visible from Earth or lost in the Sun's glare, where the planets were when Aunt Madge and Galileo were born and when the planets are all in a line so you can hide in the coal bunker before Armageddon comes. And so on.



My main programming problem was how to display the planets without making you have to type in a gigantic program or causing the crashes AmigaBasic is prone to. Calculating the planets' positions is easy, and the program is quite simple in structure. One unexpected problem was that there is no built-in constant PI, unlike most other Basics, so I defined the variable  $pi=4*ATN(1)$  as an exact equivalent in the *Params* subroutine.

I ruled out bobs and sprites. There are nine planets, and typing in line after line of numbers representing each graphic would not be very appealing. Anyway, Orrery uses 16 colours in lo-res, whereas ObjectEditor uses four colour med-res and is meant for graphics much larger than the ones I needed.

I thought about using GET and PUT to pick up and display the graphics. This seemed quite promising because these commands are fast and give smooth animation. But they are poorly error-trapped. A typing mistake resulting in PUT being used with a non-existent array or a position off the screen would mean a Guru.

My chosen method is the most satisfactory and needs the least typing. The subroutine *Put.planet* draws a small filled circle of appropriate size and colour to represent the planet and adds a few details – continents for Earth, the Great Red Spot on Jupiter and a white ring for Saturn. It also stores the screen coordinates of the image in the

arrays *qx()* and *qy()*. On the next pass of the program the planets' new coordinates are calculated in *px()* and *py()*.

Immediately before the new image is drawn, subroutine *Clear.planet* wipes the old one by drawing a black box over it. As there are no calculations between these two steps, the movement appears reasonably smooth.

Why not wipe the image simply by redrawing it in black, you may ask. Well, the Amiga's CIRCLE command is slow – you can see the separation between unfilled and filled circles even with the small ones used in the program – but drawing a box, filled or unfilled, is extremely fast.

**L**OOK at subroutine *Small*. It draws the Earth-Sun picture using only three boxes – two for the bodies, preceded by a black one which completely wipes the previous picture. It is so fast there is not the slightest trace of flicker, despite the crude method of clearing the area.

It may seem awkward not being able to use lots of sprites and fancy redefined character sets when writing a program for someone else to type in. However, circles, lines, boxes, points, patterns, areas and ingenuity will serve you well.

There was no need to use fancy manipulations of mouse and menu bar because there are not enough

DEALER  
INQUIRIES  
WELCOME -  
SPECIAL  
DISCOUNTS  
distributor  
enquiries:  
welcome



es and  
ard or

PC  
The  
mono



inputs or actions while the program is running to make the several k of extra programming – and subsequent typing in – worthwhile. If there were

provisions in AmigaBasic for gadgets and input fields without resorting to libraries (curse you, MicroSoft) the program could have looked more professional.

Windows are useful though:

```
' The Model Universe
' By Alastair Scott
' (c)1989 Amiga Computing

Start:
SCREEN 1,320,200,4,1:WINDOW 1,"Orrery",,30,1
DEFINT x-z:DEFDBL a-w
DEF FNrange(k)=k-360*INT(k/360)
PALETTE 0,0,0,:PALETTE 1,.5,.5,:PALETTE 2,0,0,1
PALETTE 3,0,.72,.88:PALETTE 4,0,.56,.2:PALETTE 5,0,.8,0
PALETTE 6,1,0,0:PALETTE 7,1,1,0:PALETTE 8,1,.52,0
PALETTE 9,1,1,1:PALETTE 10,.7,.7,.7
GOSUB Params
FOR phi=0 TO 2*pi STEP pi/6
  LINE(150,92)-(150+4*COS(phi),92+4*SIN(phi)),7
NEXT phi
COLOR 2:LOCATE 8,2:PRINT"Earth"
COLOR 10:LOCATE 23,1
PRINT"Press button for data or Esc to restart";
LINE(10,10)-(50,50),2,b
WHILE INKEY$<>CHR$(27)
  FOR z=lo TO hi
    ecc=elt(z,4)
    an1=FNrange(.985647332#*julday/elt(z,1))
    an2=radian*(an1+elt(z,2)-elt(z,3))
    psi=FNrange(an1+elt(z,2)+twodeg*ecc*SIN(an2))
    phi=radian*(psi-elt(z,3))
    rad=elt(z,5)*(1-ecc*ecc)/(1+ecc*COS(phi))
    rad(z)=rad
    psi(z)=psi
    px(z)=150+scale*rad*COS(psi*radian)
    py(z)=92-scale*rad*SIN(psi*radian)
  NEXT z
  GOSUB Date:GOSUB Small:IF MOUSE(0)THEN GOSUB Info
  FOR z=lo TO hi:GOSUB Clear.planet:GOSUB Put.planet:NEXT z
  julday=julday+stime:julian=julian+stime
WEND
RUN

Small:
an1=FNrange(.985637094#*julday)
an2=radian*(an1-3.76286301#)
phi=FNrange(an1+98.83354+twodeg*.016718*SIN(an2))
LINE(11,11)-(49,49),0,bf:LINE(29,29)-(31,31),7,bf
LINE(30*16*COS(phi*radian),30-16*SIN(phi*radian))-STEP(1,1),4,bf
RETURN

Info:
WINDOW 2,"Information",,(20,40)-(210,90),16,1
FOR a=lo TO hi
  COLOR 10
  template$=" \ ##"+CHR$(176)+" ##.#AU"
  PRINT USING template$:planet$(a),psi(a),rad(a)
NEXT a
WHILE MOUSE(0):WEND:WINDOW CLOSE 2:RETURN

Put.planet:
x=px(z):y=py(z)
CIRCLE(x,y),cir(z),col(z),,,1:PAINT(x,y),col(z)
IF z=3 THEN GOSUB Earth
IF z=5 THEN GOSUB Jupiter
IF z=6 THEN GOSUB Saturn
qx(z)=x:qy(z)=y:RETURN

Earth:
LINE(x-1,y-1)-(x-1,y+1),4:LINE(x+1,y)-(x+1,y+1),4:RETURN

Jupiter:
LINE(x-2,y+2)-(x-1,y+1),6,bf:RETURN
```

WINDOW 1 is the main one and WINDOW 2 is the smaller one which displays the orbit parameters. It vanishes without disrupting the area it overprints. How many other Basics could do that?

```
Saturn:
LINE(x-4,y)-(x+4,y),9:RETURN

Clear.planet:
x=qx(z):y=qy(z):LINE(x-4,y-4)-(x+4,y+4),0,bf:RETURN

Params:
RESTORE Planets
FOR a=1 TO 9:READ planet$(a),col(a),cir(a):NEXT a
pi=4*ATN(1):radian=pi/180:twodeg=2/radian
COLOR 9:PRINT:PRINT SPC(6)"Inner or outer planets? ";
pls=""
WHILE INSTR("*IO",pls)<>:pls=UCASE$(INPUT$(1)):WEND
COLOR 6:PRINT pls
COLOR 9:PRINT:PRINT SPC(2)"Starting date (DD,MM,YYYY) ";
COLOR 6:INPUT",day,month,year
COLOR 9:PRINT:PRINT SPC(8)"Step time (days) ";
COLOR 6:INPUT",stime
planet=ABS(pl$="I")
ON planet+1 GOSUB Outer,Inner
yr=year:mo=month
IF month<3 THEN yr=yr-1:mo=mo+12
a=yr\100:b=2-a\4:c=INT(365.25*yr):d=INT(30.6001*(mo+1))
julian=b+c+d+day+1720994.5#:julday=julian-2444238.5#
CLS:RETURN

Outer:
lo=5:hi=9:scale=2:RESTORE Outer.data:GOSUB Get.data:RETURN

Inner:
lo=1:hi=4:scale=50:RESTORE Inner.data:GOSUB Get.data:RETURN

Get.data:
FOR a=lo TO hi:FOR b=1 TO 5:READ elt(a,b):NEXT b,a:RETURN

Date:
f=INT(julian+.5)
IF f<2299161& THEN
  a=f
ELSE
  g=INT((f-1867216.25#)/36524.25):a=g+g\4
END IF
b=a+1524
c=INT((b-122.1)/365.25)
d=INT(365.25*c)
e=INT((b-d)/30.6001)
day=b-d-INT(30.6001*e)+julian-f
IF e>13.5 THEN month=e-13 ELSE month=e-1
IF c<2.5 THEN year=c-4715 ELSE year=c-4716
IF month<3 THEN year=year+1
month$=MID$("JanFebMarAprMayJunJulAugSepOctNovDec",month*3-2,3)
COLOR 6:LOCATE 2,28:PRINT USING"## & ####";day,month$,year
RETURN

Inner.data:
DATA .24085,231.2973,77.1442128,.2056306,.3870986
DATA .61521,355.73352,131.2895792,.0067826,.7233316
DATA 1.00004,98.83354,102.596043,.016718,1
DATA 1.88089,126.30783,335.6908166,.0933865,1.5236883

Outer.data:
DATA 11.86224,146.966365,14.0095493,.0484658,5.202561
DATA 29.45771,165.322242,92.6653974,.0556155,9.554747
DATA 84.01247,228.0708551,172.7363288,.0463232,19.21814
DATA 164.79558,260.3578998,47.8672148,.0090021,30.10957
DATA 247.691,209.439,223.5224,.2502,39.409

Planets:
DATA Mercury,9,1,Venus,7,2,Earth,2,2,Mars,8,2,Jupiter,7,3
DATA Saturn,8,3,Uranus,3,2,Neptune,5,2,Pluto,9,1
```



# SUPERDEALS

Sixteen Bit Superdeals from the Sixteen Bit Specialists!

CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier

**NEW**

**AMIGA A500 +  
500 AIR MILES  
£449**

**NEW**

Air Miles pack includes everything in our Amiga System 1 pack PLUS:

- ★ Spritz Paint Package
- ★ Disk wallet for 25 disks
- ★ Star Ray
- ★ Who Framed Roger Rabbit
- ★ Nebulus
- ★ Plus 10 other free games worth £230
- ★ PLUS 500 free Air Miles, that's enough for a return flight to Paris, Amsterdam, or Brussels.

## EXTERNAL DISK DRIVES

Amiga A1010 1MEG £139.00

Cumana 1MEG £99.95

NEC 1 MEG £89.95

## PRINTERS

Seikosha 80 column NLQ (inc lead) .....	£139
Seikosha 80 column 24-pin LQ (inc lead) .....	£279
Star LC10 including interface lead .....	£199
Star LC10 colour including interface lead .....	£249
Citizen 120D including interface lead .....	£159

CREDIT CARD ORDERLINE Tel: 0908 78008 (Mon-Sat 9am - 6pm)  
To order either call the order line above with your credit card details OR make a cheque/PO payable to Digicom Computer Services, and send it with your order to the address below. Callers are also most welcome at the address below

DIGICOM

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES MK2 2AZ

All prices include VAT and delivery by courier



## AMIGA 1 MEG+ £519.00

Announcing the new Amiga 1 meg - an A500 system 1 with fitted 1 megabyte memory expansion and clock card PLUS TV Modulator AND DRAGON'S LAIR a six disk 1 meg megagame!

Amiga A500 System 2

**£385.00**

Amiga A500 System 1 plus over £280 worth of software, comprising 10 games and either Spritz or Photon Paint graphics package

## NEW! AMIGA 1 MEG! £499.00

## MONITORS

Commodore Amiga A1084 Stereo colour monitor inc lead ..... £269.00

Philips CM8833 stereo colour monitor inc lead ..... £249.00

# EAZYPRINT

## Authorised Amiga 2000 Dealer

The all-new Commodore B2000 solutions now available - systems including 8Mb RAM, 21" FST Monitor, 68020 Co-Processor, A2094 Autoboot hard disk, Internal Genlock etc.

### QUOTATIONS IMMEDIATELY AVAILABLE

Amiga A500 c/w TV Modulator, 5 P.D Disks	370.00
Amiga A500 c/w 1084S Stereo Monitor	619.99
mini-GEN genlock	99.95
A501 512k RAM expansion for A500	130.00
External 3.5" Quality Cumana Disk Drive	99.95

## Telephone Hotlines:

Sunbury (0932) 781257

(0932) 780103

Fax : (0932) 780367

## PROFESSIONAL PERIPHERALS

Rendale Broadcast Genlock	750.00
A2058 B2000 RAM Card c/w 2Mb	649.00
15" High Resolution Multisync Monitor	885.00
21" Flat Screen Multisync Colour Monitor	2770.00
40Mb Autobooting Hard-Disk	1150.00
Amiga 2000 AT Bridgeboard	861.00

### PRICES INCLUSIVE OF V.A.T @ 15%

Generous Discounts available to PLCs, Limited Companies, Government authorities, ICPUG members and all Consultancy Agencies. Please Call.



The new Commodore Amiga 2000 systems now available. For perfect solutions for your DTP/Audio Visual/CAD/Presentation needs, call one of our Commodore-trained experts today. Full training and Support available.

New Catalogue now published - please call for your complimentary copy.



Eazyprint Computers, Denmar House, 30 Scotts Avenue,  
Sunbury - on - Thames, Middlesex, TW16 7HZ.

# NOW OUT!

The bright new magazine that shows you how easy it is to make your own video movies...



If you have a video camera – or just thinking of getting one – you'll find *Video Action!* your passport to an exciting new world. No dull technical reviews but pages packed with help and advice – written by experts in a language **anyone** can understand. You'll find all you need to know about lighting, scripting, directing, sound dubbing... and the magic of desktop video – using a home computer to create titles and captions and generate your own startling special effects.

## ORDER FORM

Please send me the next 12 issues of *Video Action!* for the special price of £13 (normally £18) (1530)

Payment: Please indicate method ()

Access/Mastercard/Eurocard/Barclaycard/Visa

Expiry Date  /

No.

Cheque/Eurocheque made payable to Database Publications Ltd.

Name \_\_\_\_\_

Signed \_\_\_\_\_

Address \_\_\_\_\_ Post Code \_\_\_\_\_

Send to: FREEPOST, Video Action, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

AMC8

1 Bridge Street  
Galashieles  
TD1 1SW  
Tel: 0896 57004  
(24 hours)

WORLDWIDE  
SOFTWARE

106A Chilwell Road  
Beeston  
Nottingham  
NG9 1ES  
Tel: 0602 252113

AMIGA LEISURE		AMIGA LEISURE		AMIGA LEISURE	
3D Pool	17.95	High Steel	14.95	Spherical	14.95
African Raiders	14.95	Hollywood Poker Pro	18.75	Star Glider II	16.45
Afterburner	16.45	Hostages	16.45	Star Wars	14.95
Airborne Ranger	17.95	Hybris	18.75	Steve Davis World Snooker	14.95
Archipelagos	18.75	It Came From The Desert	22.95	Super Scramble	14.95
Astaroth	17.95	Jaws	14.95	Sword of Sodan	19.95
Balance of Power 1990	18.75	Journey	22.95	Talespin	22.95
Barbarian II	15.95	Ken Daggleigh Manager	14.95	Tank Attack	17.95
Battlehawks 1942	19.95	Kennedy Approach	16.45	The Duel – Test Drive II	22.95
Bio Challenge	17.95	Kick Off	14.95	The Kristal	21.95
Blood Money	17.95	Kings Quest Triple Pack	17.95	The New Zealand Story	17.95
Bloodwyche	17.95	Kult	17.95	Thunderbirds	17.95
Bridge Player 2000	14.95	Last Ninja 2	17.95	Times of Lore	17.95
Carrier Command	16.45	Licence to Kill	17.95	Time Scanner	18.75
Castle Warrior	17.95	Lombard RAC Rally	16.45	TV Sport Football	21.95
Chariots of Wrath	17.95	Lords of The Rising Sun	22.95	Typhoon Thomson	17.95
Colossus Chess X	18.75	Manhunter N.Y.	22.95	Ultrav. Mil. Sim.	16.45
Cosmic Pirate	16.45	May Day Squad	14.95	Ultimate Golf	14.35
Dark Side	17.95	Micropro Soccer	18.75	Voyager	17.95
Data Storm	17.95	Milenium 2.2	18.75	Wanderer	14.95
				War in Middle Earth	14.95

Fast delivery on all stock items by 1st Class Mail in UK. Special overseas service by Air Mail worldwide. Credit card orders accepted by Phone or Mail. Credit Card Order Telephone Lines: North, Scotland, N.Ireland, Overseas – 0896 57004 (24 hours). South, Midlands, Wales – 0602 252113 (24 hours)

AMIGA LEISURE		AMIGA LEISURE		AMIGA LEISURE	
Déjà Vu II	17.95	Navy Moves	18.75	Wee Mans	17.95
Demons Winter	17.95	Operation Wolf	17.95	Weird Dreams	16.45
Dominator	18.75	Oultrun Europa	14.95	Wicked	17.95
Double Dragon	16.45	Personal Nightmare	18.75	Xenon II Megabeast	22.95
Dungeon Master (1 Meg)	16.45	Phobia	17.95	Xeno Probe	17.95
Elite	16.45	Police Quest	18.75	Xybots	14.95
Emmanuelle (adults only)	14.95	Populus	18.75		
Falcon Mission disk	14.95	Power Drome	18.95		
Flying Shark	17.95	Prospector	18.75		
F.O.F.T.	24.95	Rampage	18.95		
Forgotten Worlds	14.95	Red Heat	18.75		
F16 Combat Pilot	15.95	Rick Dangerous	17.95		
F16 Falcon	20.95	Run the Gauntlet	18.75		
Fright Night	14.95	Running Man	18.95		
Fun School 2	14.95	RVF	17.95		
Gemini Wing	14.95	Savage	17.95		
Goldrush	17.95	Silkworm	17.95		
Grand Monster Slam	14.95	Shoot 'em up Con. Set	22.95		
Gunship	17.95	Sleeping Gods Lie	17.95		
Hawkeye	14.95	Space Quest II	18.75		
		Speedball	16.45		

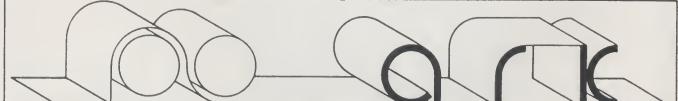
SPECIAL OFFER  
Amstrad 3160 NLO Professional  
Dot Matrix Printer for Amiga/ST  
Normal Price £199.99  
Offer Price £169.99  
(inc. VAT, all connecting cables  
and next day delivery)

### JOYSTICKS

Cheetah 125+ ..... 6.95  
Cheetah Mach 1 ..... 10.95  
Comp Pro 5000 ..... 12.95  
Comp Pro Extra ..... 14.95  
\*\*\*\*\*  
10 x 3.5" DS/DD Disks ..... 9.95  
\*\*\*\*\*

Please make cheques and postal orders payable to WORLDWIDE SOFTWARE. All prices include postage and packing in UK. Credit card orders accepted by phone or mail. Europe other than UK shipping costs are £1.50 per disk for normal airmail, £2.50 per disk for express airmail. Outside Europe shipping costs are £2.00 per disk for normal airmail, £3.00 per disk for express airmail.

Advertised prices are for Mail & Telephone Orders



TEL: 0983 79 496



ACCOUNTS		COMMUNICATIONS continued		UTILITIES continued	
Accounts Payable	41.40	On Line	40.02	Enhancer 1.3	14.72
Accounts Receivable	41.40	Ruby View/Term	71.99	E-Type	39.79
General Ledger	41.40	DESKTOP PUBLISHING		Facc II	21.39
Inventory Control	41.40	City Desk v1.2	79.35	Family Tree	39.79
Invoicing/Sales Ledger	41.40	Page Setter	62.10	Fine Print	39.79
Financial Cookbook	40.25	Page Setter Laz Driver	29.90	Flipside	25.07
Home Accounts	22.77	PageStream	116.84	Flow	79.81
Small Business Acc.	64.63	Professional Page v1.1	174.80	Gizmos Prod. Set v2	19.78
WORDPROCESSORS		Shakespear	109.94	GoldSpell 2	23.69
Becker Text	96.37	Graphic Setter	37.95	Gom3	23.69
Excellence	134.78	Deluxe Paint III	60.95	Com3, The Button	49.91
Kindwords 2	35.42	Delux PhotoLab	50.37	Grabbit	23.69
K-Text 2	43.70	Movie Setter	48.99	Interchange	39.33
LPD Writer 1	96.37	Zoetrope	77.97	Interchange Modules	19.78
Microtext	14.95	ProText	111.55	JDK Images/Video Fonts	39.79
ProText	64.86	Critics Choice	74.75	K-Gadget	23.92
ProWrite 2	67.39	Publishers Choice	69.92	Kara Fonts	44.39
TextPro	39.10	The Works	69.92	Life Cycles	29.90
TextCraft +	39.10	UTILITIES		Lions Fonts	50.37
VisaWrite Desktop	69.92	AIRT 2	54.97	Mathimation	50.37
WordPerfect 4.1	169.97	AmigaOS Express	24.15	Maxidesk	56.12
Write & File 1Mb	69.69	Arex	29.21	Newsletter Fonts	23.69
SPREADSHEETS		Ashas Caligrafants	45.31	Outline	35.88
DGcalc	29.90	Award Maker Plus	29.90	Power Windows 2.5	50.37
K-Spread 2	49.91	B.A.D. Disk Optimiser	33.58	Project D	29.90
Maxiplan A500	69.92	BBC Emulator	39.33	Quarterback	36.11
Maxiplan Plus	109.48	Calligrapher	72.45	Studio Fonts	23.69
SuperPlan	67.85	CLI-Mate	29.44	Superback	39.79
VIP Professional	73.37	Cygnum Ed	74.98	Text Ed Plus	42.32
DATABASES		Designosaurus	29.90	Virus Inf. Protection	39.79
Acquisition v1.3	159.85	Disk2 Disk	28.06	Word Perfect Library	88.09
Data Retrieve	42.32	Disk Master	31.97	WShell	31.97
Data Retrieve Pro	160.77	DiskPro & Dimmer	21.85	X-Copy	23.69
db MAN	109.94	Diskwick	39.79	DISKS (10's) KAO branded Japan	
Form Master	40.02	DOS 2 DOS	29.90	3.5" 135pi 880K	13.80
K-Data	34.96	Encore	49.91	5.25" 48pi 360K	6.90
MailShot Plus	36.34			5.25" 96pi 720K	9.20
Microbase	14.95				
Microfile	58.88				
SuperBase Personal	40.94				
SuperBase Personal 2	69.92				
SuperBase Professional	156.40				
COMMUNICATIONS					
A Talk Plus	67.16				
A Term	49.91				
Aegis Diga	41.40				
BBS-PC	99.82				
K-Comm 2	22.77				

Richard Howe & Angela Hammet  
Applied Research Kernel

Corve Farmhouse, Chale Green, Ventnor, PO38 2LA, U.K.

POSTAGE: UK Free, Europe £2, World £4, Swiftair + £2

COMPANY: Amiga/QL Specialists, established 3 years

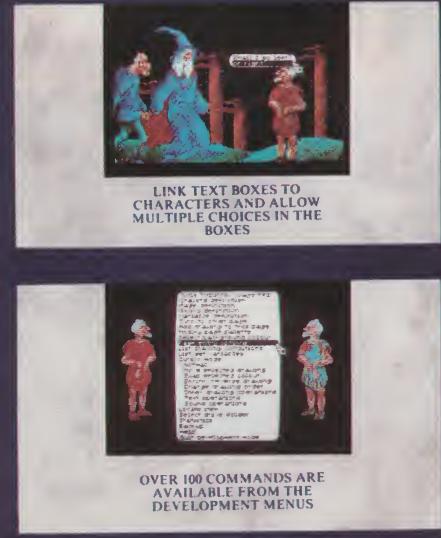
V.A.T.: All prices include U.K. V.A.T. at 15%

CHEQUES: London Sterling payable to A.R.K.

EXPORT: Remove U.K. V.A.T. (-Price/1.15)

PRICES: Are subject to change

MICRODEAL 1989



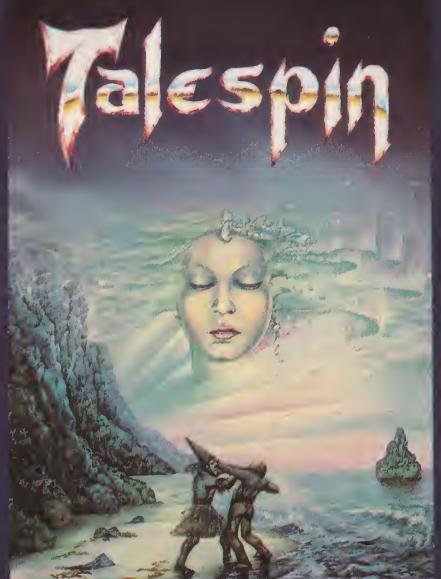
« 24A

MICRODEAL 1989



« 23A

MICRODEAL 1988



22A

MICRODEAL 1988



« 22

ATARI ST  
AMIGA  
IBM  
£29.95

# Talespin

THE INTERACTIVE PROGRAM CREATOR

#### WHAT IS IT?

Talespin is a package which allows the collecting together of drawings, texts and sounds onto a series of pages together to form an interactive story, guide or textbook, which is read purely by clicking the mouse on the drawings or texts. Variables may be used to control the flow of narrative or record progress made. Talespin itself is entirely mouse-driven and very user-friendly, requiring no programming skills for its use. It includes an art package as well as importing Neochrome, Degas or IFF picture files and also imports ST-Replay or Amiga A.M.A.S. created Digitised Sound. The use of sound is optional. Its facilities include giving full details of disk space usage, location of all pages referring to any particular page, drawing, sound or variable, completely interactive development allowing changes to any part of a title at any time, the copying of drawings and sounds from other titles, the 'chaining' to other titles allowing the spreading of a story or textbook across several disks, and the provision of Demo mode, which allows a title to run on its own for demonstration purposes.

#### WHAT IS IT FOR?

It can be used to create interactive adventure games, for profit, pleasure or instruction. Or in business to create a sales demonstration, or product servicing manual. Or in education: either using Talespin itself to teach the design and logic of computer systems in a non-technical way, or using Talespin as a vehicle for the teaching of any other subject. Or create an expert system with it. Or a school magazine. Or . . .

#### CREATE YOUR OWN COMMERCIAL PROGRAMS

Once you've finished developing your program whether it's an adventure, an educational program or other you can lock your program so no one can enter the development mode.

TALESPIN comes with a public domain display program called "Telltale" with this you can distribute your own programs or offer them to publishers.

#### COMPLETE AND COMPREHENSIVE MANUAL

The manual comes as a complete Tutorial with a scaled down version of "The Grail" adventure and also a comprehensive reference guide.

#### TALESPIN COMMANDS AVAILABLE

\*choose/create title \*Save position \*load position \*Select driver/folder \*auto start \*demo program \*help \*drawing define \*page define \*sound define \*variable define \*turn to another page \*add drawing to page \*modify palette \*select background colour \*Page entry options \*List conditions \*list/set variables \*move drawing \*swap colour \*shrink reverse drawing \*change drawing order \*add/edit/delete text \*add/delete/chain sounds \*locate item \*show disk space \*show drawing/ sound/page size.

#### REVIEW FOR TALESPIR

ST USER: 'Microdeal is putting its money where its mouth is and exhibiting justifiable faith in a very good product.'

MICRO COMPUTER MART: 'Talespin in my opinion, is a highly commendable program.'

ST/AMIGA FORMAT: 'Graphics cleverly used for variety — Talespin offers the opportunity to create an RPG type of adventure game which STAC and STOS certainly won't.'

COMPUTER GAMES WEEK: 'Talespin gives the programmer all the scope he could possibly need.'

ST ACTION: 'Talespin has brought the task of adventure creation within the reach of everyone!'

\* If you have a modem, phone our BBS — (0726) 65422 — & download Talespin demos written by users. \* 30 day money back guarantee.

#### TO ORDER

SEND TO: MICRODEAL  
PO BOX 68 St Austell  
Cornwall PL25 4YB  
Allow 28 days for delivery

BY PHONE  
WITH CREDIT CARDS  
TELE (0726) 68020  
£29.95 (incl P&P)



Please send me Talespin at £29.95 (incl P&P)

I OWN A  ST  AMIGA  IBM

Cheque enclosed made payable to MICRODEAL

Please debit my credit card account Expiry date .....

--	--	--

--	--	--

--	--	--

--	--	--

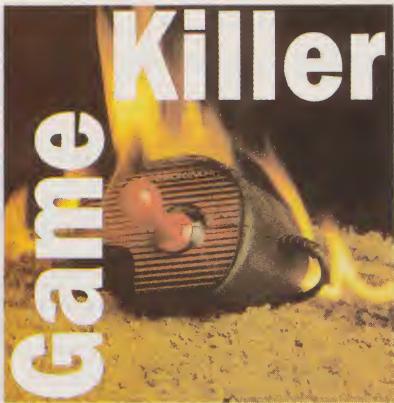
Name .....

Address .....

.....

Signed: .....

microdeal



**S**OMEONE with his own keyboard steroids is Stephen Walker from Basingstoke. He is so good at Police Quest it's criminal. Stephen says all the telephone numbers you should need during the game are 555-6674 for Lt Morgan and 555-9222 for the taxi firm you need to get rid of Sweety in the hotel room. Pressing 0 on the phone in the hotel gets two more useful numbers.

Stephen also says that after talking

## Joystick jihad

*Max the Hacks, the man who is so good at games he can play I Spy with his eyes shut, shows you how to be as good as he is*

to the hotel barman you should say "gamble" to get further in the game. When you join the first poker game don't quit. Try to win by getting more than \$1,000. In the second game it is harder to win, so just play 40 hands without running out of money.

When asked if you talk business answer "yes" and follow the man up to the top floor. Before entering the apartment use Ctrl-D to call your backup. Always check the car's

wheels before leaving base by using the Check Car command. And if you are attacked by bikers use the nightstick which is inside the car. Thanks, Stephen.

At the end of his letter Stephen says he is having trouble with Guild of Thieves, so it is lucky that Darren Self has written in from Berkshire with some tips. One of Stephen's problems is crossing the coloured squares. The solution is to follow the rainbow backwards - violet, indigo, blue, green, yellow, orange, red. Thanks a bundle Darren, Mr Postie will be bringing you a present.

**T**HERE is one game, one very, very special but difficult game, which has won the hearts of all at *Amiga Computing* - *Silkworm*. There are two versions with different cheat modes. For early versions get to the controls set-up page by pressing F10 from attract mode, hold down Help and press Fire to get infinite lives.

If you have a later version press F10 from attract mode for the controls page and type SCRAP 28. The single space between P and 2 is important. The screen will flash once. You now have infinite lives.

Pressing F1-F10 will slow the game down from normal (F1) to a crawl (F10). Pressing 1 to - (minus) lets you jump levels.

Scorpion was the rave game in the



June issue. It may be good, it may have great sound and sprites but the regular quota of lives just isn't enough. To get lots more lives (about eight I think), type INPORTLIGAT into the high score table. There are other things you can type in. CRL is one, Clement is another. Try them for a laugh.

**R**EADERS who took the editor's advice last month and stopped eating so they could afford a Commodore hard drive are probably looking for some games to put on to it. They are also probably very hungry. Ian Mackenzie from page 93 of my London A to Z has some advice for them.

Since you can't eat Cinemaware's Lords of the Rising Sun, however yummy the graphics are, you can put it on the hard drive, despite the message from Mirrorsoft saying you can't. Make a directory for the program and call it "Lords".

Using CLI, copy all the files using the line *copy df0: dh0:lords all*. Do this for both discs. Then edit your Startup-Sequence file to include the lines *assign RisingSun1: dh0:lords* and *assign RisingSun2: dh0:lords*.

Then whenever you want to run the program make sure disc 1 is in the floppy drive and type *run Main*. The game needs the floppy for the disc protection, but actually loads off the hard drive.

Baal is not what one sheep said to another, but the name of a game from Psyclapse. Jerome Sanders from the Netherlands has sent in some tips and is going places. The particular places are the grid locations in X-Y format for objects.

You will find things at 00-53, 12-62, 17-28 where you will get weapon number 2), 28-50 - where you will get weapon number 3 - and 36-28, 24-04, 48-02, 48-65 and 48-65 which is the exit to level 2.

Note that from 40-02 to 48-65 is too

Lords the hard way



Arr, Max lad . . .

# SEVENTEEN BIT SOFTWARE

The UK's leading supplier of European PD Software, as seen at the Commodore Show, Novotel, London.

Seventeen Bit are pleased to announce the...

## AMIGA COMPUTING PACK

Containing the following discs...

**Disc 404** - 17Bit Supreme sounds Vol 1, excellent jukebox featuring a brilliant modern version of Toccata by Allister Brimble and more...

**Disc 423** - A special compilation of Star Trek Animations for ALL Amiga machines, animations by Tobias Richter. Compiled by us.

**Disc 424** - The first of the popular Quickstart III discs containing some top-class utilities (including CLIwizard to tame the CLI) and three top-notch PD games (Gravattack, Invaders and Tiles) also includes VirusX 3.2 to banish all current forms of virus.

**Disc 421** - A special compilation of Ray-Traced images created by Adrian Purser via his own program, still under development, stunning 3D graphics and shows just what is possible.

**Plus!!** Issue six of our latest disc-magazine, **Plus!!** Free membership to Seventeen Bit (No obligations!) and access to the full range of PD discs

**ALL THIS FOR ONLY £10.00 Inclusive of P&P etc!!!**

All discs available to members at £2.50 each, coming VERY soon.. NEWSFLASH!! a brand-new disc-magazine for Europe created by UGA and 17Bit. Exclusive distribution in the UK by Seventeen Bit Software, write for subscription details (only £3 per issue).

**Quickstart III pack still available for just £5, contains 3 hi-quality PD compilations.**

## SEVENTEEN BIT SOFTWARE

PO BOX 97, 1st Floor 2-8 Market Street,  
Wakefield, West Yorks, WF1 1XX  
Telephone 0924 366982 (24 hours)



## Mail Order Offers

**Solar powered,  
see through calculator.  
FREE with orders  
over £25\***

Using state-of-the-art technology this calculator has an invisible membrane keypad, runs from solar cells (so you'll never need any batteries), and because it's only the size of a credit card it fits easily in your wallet or pocket.

This exclusive limited edition calculator can be yours for just £7.95 – or we'll send you one ABSOLUTELY FREE with every order over £25!

\* UK orders only (not subscriptions). Subject to availability

**EXCLUSIVE**



**TO ORDER PLEASE USE THE FORM ON PAGE 95**

## Archer MacLean's codes for International Karate Plus

ARCHER likes to send messages to people he knows in his games. You can read them if you know what to type. Some codes change what is happening, but don't swear twice or the program will reset. Just type them in.

FISH, BIRD, PAC, and PERI make different things happen.

SLAN produces a line of slanted text.

FAST speeds up the music while you hold down the letter T.

FILT turns the music filter on.

DATE shows when the program was written.

TITL jumps back to the title screen.

FREZ will freeze the game. Great for screen shots.

GERM changes all the messages to German.

UK turns them back into English. ARCH, EDHK, FOOK, ANGL, SHAH, ANBK, STEW, GPZP, SIMR, SUNL and JACQ are all friends.

JUMP is an advertisement for Archer's custom jumper service.

far. Make a stop at 17-28 or 36-28 and take a new power cartridge before you continue to 48-65. When there are two cartridges leave one behind at the first visit.

Level 2 has fewer stopping points, but often more than one object per location. Hop through these. 12-16, 30-32, 24-00 and 12-53 are the resting place of weapon number 4 and the exit to level 3 and the battle with Baal.

You don't have to go to all the places in this order, but on level 1 it is wise to get weapon 3 as soon as possible. The best approach to level 2 is to go to 12-53 twice, once to get weapon 4 at the first opportunity and then again when you've picked everything up and are ready for Baal.

Finally Esther, some solutions to trick shots from Firebird's Maltese Joe Plays 3D Pool. Shot 1: 0768 024 63 10. Shot 2: 1002 041 63 09. Shot

3:0032 100 63 00. Shot 4: 0962 024 63 00 and Shot 13:0004 054 58 20. A great game, you'd be daft not to buy it. OK, Orlando?

That's all for this month, I'm off to wax my joystick ready for next

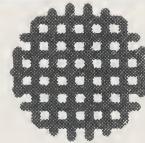
month's top tip bashing, but I need help. So if you have a hint or a hack pop 'em in the post to Max The Hacks, Amiga Computing, North House, 78-84 Ongar Rd, Brentwood, Essex, CM15 9BG.

# PROGRAM Magic



SEND FOR FREE BROCHURE PACK

ORDER NOW - 24 HR CREDIT CARD HOTLINE  
0395 270273



# DIGITA INTERNATIONAL

TOP QUALITY PROGRAMS AT MAGICAL PRICES

All software written in the UK. Prices include VAT & P&P (add £2.00 for export)

**DG CALC**  
"I really liked the package, and first impressions are important. Digita deserves full marks" Amiga Computing

**HOME ACCOUNTS**  
"My overall impression of this program was one of QUALITY... excellent value for money" Amiga User International

**MAILSHOT**  
"Well presented. At that price it is hard to think of anyone who could not get value for money" Atari User International

◆ **DG CALC** ◆  
At last, an inexpensive and genuinely easy to use spreadsheet program. Command and menu-driven, 512 rows, 52 columns, programmable function keys, text overflow and much, much more. Simple enough for the beginner, powerful and fast enough for the professional.

A calculated best buy £39.95

◆ **MAILSHOT** ◆  
A powerful menu-driven mailing program using a unique system for on screen scrolling of labels. This WYSIWYG (what you see is what you get) system means that any label format you define on screen will be identical when printed.

As well as powerful sorting and searching (search for anything, anywhere!), Special Routines include: detection of duplicate labels, surname sorting and many, many more. For business users, MAILSHOT PLUS is also available.

Why set your sights lower £24.95

◆ **HOME ACCOUNTS** ◆  
Ideal for both home users and small businesses. Supports workbench and multitasking, simple to use, this complete home accounting package will cater for up to 10 income accounts (e.g., bank, credit card, HP) and 60 categories of household expenditure (e.g., mortgage, rates, food, etc.) with optional budgeting. The program will automatically handle 100 Standing Orders, etc., and allow you to produce your own statements to check bank account(s)/charges, credit cards, etc. ... Process up to 300 transactions per account per year. Comprehensive reporting facilities include: detailed statements, budget forecasts, pie and bar charts, etc.

You'll wonder how you ever managed without it! £29.95

◆ **DAY-BY-DAY** ◆  
A comprehensive diary planner which is equally suitable for the business or at home. Includes built-in intelligent calendar, search/sort, printing, weekly/monthly planners, etc.

For the best laid plans £29.95

◆ **E-TYPE** ◆  
Transform your existing computer into a fully fledged typewriter, displaying and printing text instantly. Ideal for form-filling, addressing envelopes, memos, etc. Character by character or line by line printing (with word-wrap, justification, etc.)

The emulated typewriter £39.95

PLEASE RUSH ME BY RETURN (enter quantity)

Please debit my ACCESS/VISA CARD

Amiga	PRICE	No.
DG CALC	£39.95	
HOME ACCOUNTS	£39.95	
MAILSHOT	£24.95	
MAILSHOT PLUS	£49.95	
DAY BY DAY	£39.95	
E-TYPE	£39.95	
DEMO DISC	£2.95	

Please send FREE Brochure Pack

Expiry Date \_\_\_\_\_  
Signature \_\_\_\_\_  
Post to: DIGITA INTERNATIONAL LTD.  
BLACK HORSE HOUSE, EXMOUTH  
DEVON EX8 1JL

Name: \_\_\_\_\_ Address: \_\_\_\_\_



# Look what's waiting for you ... when you join the fastest growing electronic mail service of all!

Four years' continual development have made MicroLink into the COMPLETE communications and information system for everyone with a home or business computer.

And it's so easy to use. From your keyboard, linked to a modem and phone, you can directly key into an ever-growing range of services, both in Britain and around the globe.

Every day thousands of electronic mail messages pass between MicroLink subscribers throughout Britain . . . and many other parts of the world. From their keyboard they can also send telex and fax messages, without the need to buy expensive equipment.

MicroLink can be used with ANY computer, from a tiny hand-held Psion Organiser or Z88 portable to the most sophisticated computer of all. And from anywhere where there is a telephone point.

So if you want to speed up your mail, tap into a weather satellite, carry out company searches, obtain free legal and financial advice, order flowers, book theatre tickets, negotiate a mortgage, help yourself to free telesoftware programs – or go adventuring in the land of Shades, the world's biggest multi-user game – then there's only one answer – MicroLink.

One number to dial  
one security password  
one simple log-on  
and you're only a  
keystroke away from  
the best information  
and entertainment  
services now available.

## FIND OUT MORE ABOUT **MicroLink**

Please send me more facts about

**MicroLink**

Send to: MicroLink, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

Name \_\_\_\_\_

Address \_\_\_\_\_

**Use TELECOM GOLD  
FREE\* for a month!**

When you send in the form alongside you will receive a unique invitation to join MicroLink, with FREE registration and telex validation (normally costing £15), and a month's FREE\* connect-time to your MicroLink/Telecom Gold mailbox. So you can find out for yourself what MicroLink is all about without it costing you a penny.

\* This exclusive offer relates to connect time only and does not include telephone, any possible PSS charges or surcharged services

# AMIGA Letters

## Piracy and copyright

WHY cannot consent be given for software to be copied at home in return for a royalty fee covering programming costs?

This would give each copy the legal status of an original in terms of copyright and enable those who wish to pay for the use of the software, but cannot afford the overheads of commercial distribution, packing, copying and advertising, to do so.

E.O. Hobden,  
Lincoln.

*Such a system exists, it's called shareware. Software is freely distributed on the basis that if you like a program you will send the author some money.*

*This is much more popular in the US, where users are more honest about coughing up. We will be bringing you some of the best shareware on future cover discs. Please send the authors a contribution. We will be.*

## Next move?

MY interests lie in the field of art and animation. At present I have Deluxe Video and Deluxe Paint II and am contemplating buying Aegis Animator and Images along with a music compilation software of some type, as a suitable package.

But here are my main expansion considerations: Should I invest in an A501 memory extension, a dual 3.5in second/third disc drive, a single floppy drive or upgrade completely to a more powerful machine, such as an A2000?

Marcus Barrett,  
Somerset.

*We would go for Deluxe Paint III as an animation package. If you have DPaint II it is a cheap upgrade (£30), and very easy to use. You will need at least 1 meg of ram, preferably more if you want to produce a decent animation.*

*A second drive of some sort is a must and for these reasons go for the Commodore A590 Hard Drive Plus. You can add ram more cheaply than buying an A501 and it saves floppy shuffling because everything fits on to the hard disc.*

cut off, you can call it on 0362 698867. It runs on a Beeb at the moment, but I have almost finished a new package written in 68000 for the Amiga.

One last point. Our group (The TMB Dev.Corp) is currently working on a new game for the Amiga. We need original music rather desperately. If you think you can help, get in touch with us.

Toby Simpson  
Spixworth, Norwich.

## Leaving home ain't easy

WOULD it be possible to connect the Plotmate A3M plotter I am using with an Archimedes in school for GCSE technical drawing to my Amiga A500 for use with programs such as Aegis Draw 2000?

A friend is planning to buy an Amiga A500 but is moving to Canada soon. I know that the PAL and NTSC systems are different, but would buying a Commodore hi-res monitor solve the problem of running European software on an American machine, or would it be pointless buying any software here before moving to Canada?

R.S. Jones,  
Gwynedd.

*There should be no problem using the plotter with your Amiga and Draw 2000. Have a look at X-Cad Designer.*

*Some programs are deliberately fixed so that they will only work on a PAL or NTSC system, not both. Buying a Commodore monitor will not solve the problem.*

*The best solution is for your friend to wait until he gets to Canada and buy everything out there. Check any software bought here carefully.*

## Sounds better

ONE small piece of knowledge has escaped the entire Amiga population. The Amiga possesses an audio filter. This amazing piece of hardware can be switched off unless you have an A1000 and you get all your treble back. It is very simple to do, and can be achieved by the following machine code instructions:

```
BSET #$01,$bfe001 Power Light off, filter off or...
BCLR #$01,$bfe001 Power Light on, Filter on. or...
BCHG #$01,$bfe001 Toggle state of filter
```

Will all software developers please take note.

Please plug my bulletin board: If the line isn't dead and I haven't been

## Hi praise

WELL, what can I say! I am 29 years old, and for a very long time now I have had an addiction for computer games. It is all very well being able to beat the highest score on the games in the pub, but when you come down to realise how much money you have spent at the end of the evening, it hurts.

I very soon came to the opinion that the Amiga was by far the best value for money. I have read all the magazines that are going around for it. I am not creeping by saying this (*oh yes you are – ed*) but your magazine leaves all the others standing.

Your games reviews could not be bettered; in fact I won't buy a game unless I have heard what you have got to say about it in the first place. When you show screen shots they are very clear images.

I bought my computer originally just to play games, and to save myself a lot of money. Because of your magazine, I am now interested in expanding my Amiga and learning how to program it myself.

Now I can get down to why I originally started to write this letter. I am that enthralled by your magazine that I would like to be able to boast about having the full collection on my bookshelf.

I have numbers 5,7,8,9,10,11 and would very much like to know if it is possible to obtain the copies I am missing. Also, do you supply a binder to keep them in mint condition? If so, please let me know the price as soon as possible.

as possible, and I would forward a cheque straight away.

Chris Maynard,  
New Milton, Hants.

We suppose you want a freebie? Well, it is nice to be appreciated. Back numbers and binders are available from the subscriptions department which is on 051-357 2961. Take out a sub to get the binder and a host of other goodies free.

### Talking windows

PLAYING around with the Say command under Workbench, I have found it impossible to alter the pitch and speed of the computer's voice. I have tried every possible combination of inputs in the phoneme window, all to no avail. The manual talks about changing all parameters together – but how?

Mr P Ambrose,  
Southampton.

The obvious thing to do when using Say by clicking on the icon is to type into the phoneme window the string you want to have read followed by the option. This is wrong on both counts. You should type the option followed by the string into the input window. Click it in first.

### Clickable scripts

UNDERSTANDING CLI makes using the Amiga very much easier. I've written several batch files to do various tasks. To access them I have to go into CLI and Execute them.

I thought it would be a good idea, however, to create an icon for the task and be able to run it from Workbench without needing to open CLI.

Unfortunately, all I know how to do is edit an icon using ICONED, which is no good. Could you please supply me with a solution if one is available? Many thanks.

Martin Lea,  
Lancs.

Once again the solution is in the public domain. Get a copy of Fish disc 65 which contains the ICONX program. This will help you create icons for all sorts of programs.

### Stop frame

CONGRATULATIONS on such a superb magazine. The Amiga is a brilliant computer and deserves such support. The main thing I use my A500 for is art and design. I would be

# AMIGA Letters

grateful if you could supply me with details on digitising pictures – video digitising and so on. I am most interested in this field and would welcome your response.

C. Hoper,  
Portsmouth.

*DigiView Gold produces the best digitising results – a full colour image using filters. It costs £150 excluding the black and white camera. It is available from HB Marketing on 0895 443333. DigiPic and SuperPic from Precision (01-330 7166) grab frames faster. DigiPic was reviewed in our June 1988 issue.*

### Misleading adverts

SURELY you check adverts before publishing them in your magazine, if so, why don't you notice errors like "comes with Kickstart 1.5"? What? Jumpstart 1.4 is around and available if you're a registered developer, 1.5 is still "erm, we're thinking about it".

It is either their name for their own product, if so it shouldn't be allowed as it misleads people, or a typo – but the same error has appeared in two magazines. Just a tiny little bit of checking would eliminate that sort of thing.

Martyn Oakley,  
Surrey.

*Ads are checked to make sure they are legal, decent, honest and truthful. They are not checked for stupidity. The editorial department and advertising departments work separately. This is good because it removes any likelihood of us saying that Wizzo Games' latest is also the greatest just because the ad department have their eyes on Wizzo's budget.*

*Any company which advertises things it doesn't have hurts itself in the end by ruining its reputation.*

### Only the best

WHY review totally useless games? Please, in future, only review games that we want to buy. If it is a waste of disc space we don't want to know. Why don't you make a list of all the amazing games we ought to buy? Here's a couple of mini reviews to

start you off...

**POPULOUS:** Brilliant. Everyone ought to have it. Granted, it's ported, but that's a small price to pay for such an addictive game. Takes on a whole new meaning when played over the serial port – friends become immortal enemies in seconds.

But watch out, if the game gets mega-complex it collapses over the serial port and won't continue. It seems that if your cable is high quality you may be OK.

**INTERCEPTOR:** Classic.

**SUPER HANG ON:** Amazing non-ported game. Great fun with the built-in cheat mode using the machine gun on the front.

**PACMANIA:** Really shows off the Amiga's abilities. For a real laugh play it next to the ST version.

Good points... yes, there are some. The paper you print your magazine on is very nice. Most posh! Nice logo on the front, good use of colours. A sense of humour (I hope).

No, really, your reviews are good, and on the whole accurate. The news pages are informative. In fact, apart from all the stuff above, the magazine is perfect!

Matthew Likierman,  
London W8.

*Unless we review the naff games how do you know which ones they are? Besides, the evil reviews are the funniest to read.*

### When is IFF not IFF?

PLEASE advise me. I have Kindwords and while, I am happy with most aspects of the system, I am very disappointed with the graphics.

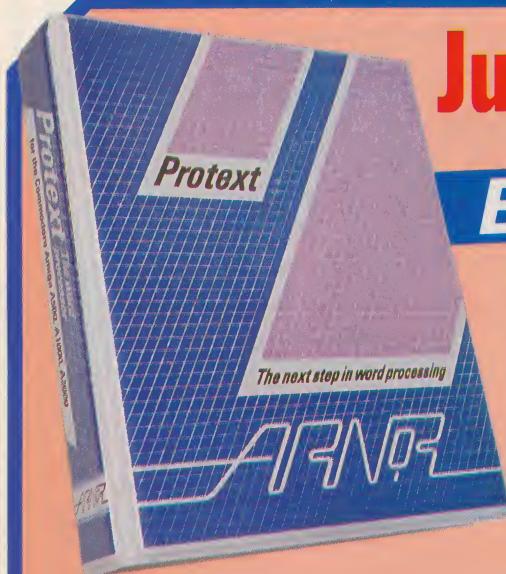
The manual is quite straightforward in its instructions for using graphics. I will quote the relevant passage:

*"Kindwords allows you to insert graphics made by any program which saves pictures in IFF format. You may insert low res or medium res images".*

I use Photon Paint graphics which are IFF format. No matter what picture I try to insert – even just a simple black and white line drawing of a square, for example – the message; "Not IFF Format" appears on the screen.

S. Palmer,  
Luton.

*Photon Paint only works with hi-res HAM images. Kindwords needs medium or low-res images. A word processing program which supported 4,096 colour HAM mode would run too slowly to be useable. Have a look at one of the non-HAM art programs such as Deluxe Paint.*



## Just how good is Protext?

**EXCLUSIVE!**

RRP £99.95  
Our price  
£79.95

**SAVE £20**

Protext is acknowledged by many as THE word processor for most home micros, and the Amiga version is no exception. What you get with Amiga Protext is a powerful workhorse with a proven track record. Plus a saving of £20 off the retail price of the new version 4!

**Press comments**

"For power and value for money, I don't think that Protext can be beaten. It can be used as simply as you choose, or can handle the most complex mailmerge routines... in short, it can be what you want it to be". – **Micronet**

"Anyone with a professional interest in words is likely to find it pays dividends". – **PC Business World**

"It is a refreshing change to review an inexpensive WP package which lives up to every expectation". – **Which PC**

"Protext deserves to be the system by which all other word processors are judged". – **Your Computer**

"The great strength of the package is its ease of use". – **CPC Computing**

"Deserves very serious consideration". – **Amstrad Professional Computing**

**Some of Protext's features**

- Automatic reformatting of text
- Page breaks shown during editing
- Can spell check as you type
- Over 70,000 word English dictionary
- Macro record mode
- Footnotes
- Menu driven configuration program
- Auto indent for program editing
- Line drawing
- Fast and flexible find and replace
- Powerful mailmerge facility
- Box mode for creating columns
- Edit two files at a time
- Keyboard or mouse operation

**'...merely the best word processor for the Amiga'**

– Reviewed in  
Amiga Computing,  
January 1989

**ORDER YOUR COPY TODAY, USING THE FORM ON PAGE 95**

**£10 saving!**

# DIGICALC

At last, an inexpensive and very easy-to-use spreadsheet that's simple enough for beginners, yet sophisticated enough for professionals.

Digicalc is both menu and command driven. It is fast, with all calculations being performed instantly, and the spreadsheet is constantly updated.

The manual has been carefully designed to cater for all types of user, from the novice to the expert. It includes a tutorial with step-by-step instructions, a glossary of computer terms, a quick reference card, a full reference section and a comprehensive index.

*"I really liked the package to begin with, and first impressions are important... Digita deserves full marks for the way in which the menus and command driven operations have been implemented... It's a no nonsense spreadsheet... I'd certainly recommend it for general purpose spreadsheet work". – Rex Last, Amiga Computing, December 1988.*

RRP  
£39.95

**OUR PRICE**

**£29.95**

Reviewed in the December issue of Amiga Computing

**TYPICAL APPLICATIONS**

- Home budgeting
- Investment project appraisal
- Comparing rent/lease/buy options
- Processing results of experiments
- Engineering calculation models
- Education

**SMALL BUSINESS APPLICATIONS**

- Cash flows
- Profit and loss statements
- Balance sheets
- Purchase orders
- Invoices
- Costings
- Stock control
- Sales/purchase/nominal ledgers
- Payrolls
- Price lists

**TO ORDER PLEASE USE  
THE FORM ON PAGE 95**

# SUMMER SUBSCRIPTION OFFER

**EXCLUSIVE!**

## DG CALC

Sells for £39.95 . . . but yours

# FREE!

(UK only)

. . . when you subscribe  
to Amiga Computing



SAVE  
nearly  
**£40!**

DG Calc is one of the most powerful and easy to use spreadsheets in its price bracket. It offers all the features you could think of, and many more besides. Specially written to make the best use of the Amiga's features, DG Calc is an invaluable addition to your business utilities. And now it's even more value for money because we're giving away an exclusive special edition of the program - ABSOLUTELY FREE. All you have to do to get your hands on a copy is take out a 12 or 24 month subscription to Amiga Computing, and we'll send you one by return. Plus you'll save £5.45 off the cover price for 12 month subscriptions, or a massive £15.85 for 24 month subscriptions! And don't forget you'll also get the monthly cover disc. **But remember, this is a limited summer offer, so to be sure of your free copy of DG Calc order your subscription today.**

A1 : "Gloves	Attr	Copy	Del	File	goto	Hold	Ins	Misc	Os	Title	Undo	Width	Quit	Last: 67
A:PRODUCT	B:PRICE	C:28%	D:38%	E:48%	F:58%	G:68%	H:	I:	J:	K:	L:	M:	N:	
1  Gloves	28.00	16.00	14.00	12.00	10.00	8.00								
2  Hat	25.00	20.00	17.50	15.00	12.50	10.00								
3  Coat	64.00	51.20	44.80	38.40	32.00	25.60								
4  Socks	5.99	4.79	4.19	3.59	2.99	2.49								
5  Tie	12.95	10.36	9.06	7.77	6.47	5.18								
6	127.94													
7														
8														
9														
10														
11														
12														
13														
14														

### 12 month subscription

Cover price

£35.40

Offer price

£29.95

**SAVE £5.45!**

### 24 month subscription

Cover price

£70.80

Offer price

£54.95

**SAVE £15.85!**

#### Some of DG Calc's numerous features:

- \* 512 rows by 52 columns
- \* Menu or command driven
- \* Adjustable column widths
- \* Text overflow
- \* Instant recalculation
- \* Integrates with other programs
- \* Window feature
- \* User definable formulae
- \* GOTO feature
- \* Password protection
- \* Cell justification
- \* powerful line editor
- \* UNDO feature
- \* Beginner's tutorial
- \* Supports keyboard or mouse
- \* UK only

To place your order, please use the form opposite

Offers subject  
to availability

Valid to 31.8.89

All UK prices include  
postage, packing & VAT

All overseas orders  
despatched by Airmail



# AMIGA

C O M P U T I N G

# ORDER FORM

NEW

## Annual Subscription (including DG Calc (UK only))

NEW

### 12 months

UK £29.95	9553	NEW *	9554	RENEWAL
Europe & Eire £34.95	9543	<input type="checkbox"/>	9544	<input type="checkbox"/>
Overseas Airmail £49.95	9545	<input type="checkbox"/>	9546	<input type="checkbox"/>

### 24 months

UK £54.95	9555	NEW *	9556	RENEWAL
Europe & Eire £63.95	9549	<input type="checkbox"/>	9550	<input type="checkbox"/>
Overseas Airmail £91.95	9551	<input type="checkbox"/>	9552	<input type="checkbox"/>

\* New subscriptions commence with the next issue

## Back Issues

(see page 74)

February 1989-July 1989 bundle £9.95 9852

Add £3 Europe & Eire / £12 Overseas

February 1989	£2.10	9708	<input type="checkbox"/>
March 1989	£2.10	9709	<input type="checkbox"/>
April 1989	£2.10	9710	<input type="checkbox"/>
May 1989	£2.10	9711	<input type="checkbox"/>
June 1989	£2.10	9712	<input type="checkbox"/>
July 1989	£2.10	9713	<input type="checkbox"/>

Add 50p per issue Europe & Eire / £2 Overseas

## Lombard RAC Rally

(see page 63)

£24.95 9829

Add £2 Europe & Eire / £5 Overseas

## Protect Version 4

(see page 93)

£79.95 9530

Add £2 Europe & Eire / £5 Overseas

## Lancelot

(see page 54)

£19.95 9522

Add £2 Europe & Eire / £5 Overseas

Send to: Database Direct, FREEPOST,  
Ellesmere Port, South Wirral L65 3EB

(No stamp needed if posted in UK)

Please allow up to 28 days for delivery

Order at any time of the day or night

Telephone: 051-357 2961

Fax Orders:  
051-357 2813

Orders by Prestel:  
Key\*88, then 614568383

MicroLink/Telecom Gold  
72:MAG001

Don't forget to give your name, address and credit card number

AMC8

Payment: please indicate method (✓)

Access/Mastercard/Eurocard/Barclaycard/Visa

No.

Cheque/Eurocheque payable  
to Amiga Computing

Exp. date  /

Name  Signed

Address

Post Code

Daytime telephone number in case of queries



2 Cowdry Close, Lordswood, Southampton, SO1 8EB

### The Works!

The popular Word Processor, Database and Spreadsheet at your fingertips for just:

**£74.99 Inc VAT**

#### Word Processing

Scribble! Word Processor with spellcheck and Mailmerge.

#### Database

Organize! Database with form editing facilities.

#### Spreadsheets

Analyze! Spreadsheet including graphs and macros.

### Publishers Choice

DTP Pack including:

Pagesetter 1.2  
 KindWords 1.2  
 Artists' Choice Artpack  
 100,000 Word Dictionary Disk  
 KindWords Superfonts  
 Headline Fonts  
 Laserscript

Only  
**£88.99**  
 Inc VAT!

### Public Domain

#### PRICES

1 - 5 disks	£3.00 each
6 - 10 disks	£2.70 each
11 + disks	£2.50 each

#### PD Starter Disks

Try our compilation starter disks especially prepared for those who are new to PD.

**Graphics 1:** Collection of IFF and HAM mode images with viewing programmes.

**Games 1:** A selection of PD entertainment software.

**Utilities 1:** Create the environment that suits you with window shadows, customized pointers and much more.

#### PD Ranges Available:

Fred Fish	Disks 1 - 188
Amicus	Disks 1 - 28
T-Bag	Disks 1 - 25

#### Free Catalogue

Send now for this valuable directory of PD software.

### X-CAD Designer

The new, powerful design and technical drawing package for professional and home use. Many drawing features plus:

**Fast refreshes**  
**Macro commands**

**Great Value**  
**£89.99**  
 inc VAT

#### COLOUR PRINTING SERVICE:-

Try our colour printing service - any IFF or HAM file printed on our HP PaintJet Colour Printer using the highest quality paper. **Prices:** each file £1.00 for first print; 50p for each additional copy. Simply enclose disk and instructions.

### How To ORDER

Simply complete the order form on the right and send it with your cheque payable to AMTECH COMPUTING to:  
 2 Cowdry Close, Lordswood,  
 Southampton, Hants SO1 8EB.

If you prefer to book your order by phone then call our 24 hour ansaphone service; simply leave your name and phone number and we will call you back for full details.

Please note that all orders are subject to the availability of stock, and prices may be subject to change without prior notice. All prices include VAT.

Name _____	Specify Item/ Quantity	Price
Address _____	The Works!	£ _____
_____	Publishers' Choice	£ _____
_____	PD - Graphics 1	£ _____
_____	PD - Utilities 1	£ _____
_____	PD - Games 1	£ _____
Post Code _____	X-CAD Designer	£ _____
Phone _____	IFF or HAM prints	£ _____
Computer _____	_____	£ _____
RAM _____	_____	£ _____
<input type="checkbox"/> Tick for PD Catalogue	P&P (fixed charge)	£ 1.00
		Total £ _____

## THE COMPUTER STORE

A500 Second Drive Quiet NEC Mechanism Able/Disable Switch Through Port and Full Metal Jacket .....	£79.95
A501 Ram Expansion .....	£129.95
Amiga 2000 Internal Drive .....	£69.95

**ONLY 80P EACH**

<b>3½" DSDD</b>	<b>3½" DSDD</b>
-----------------	-----------------

3 1/2" DSDD with 1 for 1 guarantee (each) .....	80p
3 1/2" DSDD with 1 for 1 guarantee (50) .....	£38.00
3 1/2" DSDD with 1 for 1 guarantee (100) .....	£75.00
3 1/2" DSDD Branded with 2 for 1 guarantee (10) .....	£12.99
3 1/2" 2 Meg Branded with 2 for 1 guarantee (10) .....	£24.99

Single Disc Cases (20) .....	£4.00
Disc Box Holds 30 3 1/2" Discs .....	£4.99
Disc Box Holds 60 3 1/2" Discs .....	£7.99

Printer Lead 1.8m long (PC/ST/Amiga) .....	£6.99
23 Way D Socket (make your own monitor lead) .....	£3.95

Caspell's Ribbon Refresh Re-Ink your Fabric Printer Ribbon  
160ml can will Re-Ink around 30 Ribbons. Save Pounds! .. £7.95

### Books

Amiga Basic Inside And Out .....	(Abacus) .....	£18.95
Amiga C For Beginners .....	(Abacus) .....	£18.45
Amiga DOS Inside and out .....	(Abacus) .....	£18.45
Amiga DOS Quick Reference .....	(Abacus) .....	£13.95
Amiga Disk Drives Inside and out .....	(Abacus) .....	£27.95
Amiga Machine Language .....	(Abacus) .....	£14.95
Amiga Systems Programmers guide .....	(Abacus) .....	£32.95
Amiga Tricks And Tips .....	(Abacus) .....	£14.95
Amiga For Beginners .....	(Abacus) .....	£12.95
Advanced Amiga Basic .....	(Compute!) .....	£16.95
Amiga Applications .....	(Compute!) .....	£16.95
Amiga DOS Reference Guide .....	(Compute!) .....	£14.95
Amiga Machine Language Guide .....	(Compute!) .....	£19.95
Amiga Programmers Guide .....	(Compute!) .....	£16.95
Beginners Guide to the Amiga .....	(Compute!) .....	£16.95
Compute's 1st Book of the Amiga .....	(Compute!) .....	£16.95
Compute's 2nd Book of the Amiga .....	(Compute!) .....	£16.95
Elementary Amiga Basic .....	(Compute!) .....	£14.95
Inside Amiga Graphics .....	(Compute!) .....	£16.95
Kids and the Amiga .....	(Compute!) .....	£14.95
Amiga DOS Manual .....	(Bantam/Commodore) .....	£22.95
Amiga Hardware Ref Manual .....	(New Edition) .....	£21.95
Amiga ROM Kernal Ref Includes .....	(New Edition) .....	£28.95
Amiga ROM Kernal Ref Libs & Devs .....	(New Edition) .....	£29.95

### Unit 82 In Shops

2-8 Greenwood Way

Chelmsleywood Shopping Centre  
Birmingham

B37 5TL

**021-770-0468**

**CALLERS  
WELCOME**

**POST  
FREE**

## 3.5" DISKS

**3½"**

**5¼"**

**BLANK  
DISKS**

**3.5"**

**CERTIFIED** 75p EACH

↓ ↓ BULK PURCHASES ↓ ↓  
150+ AT 72p EACH  
250+ AT 71p EACH  
350+ AT 70p EACH

**PREFORMATTED**

**AMIGA** 89p EACH  
**ATARI ST** 85p EACH

**5.25"**

**CERTIFIED** 24p EACH

↓ ↓ BULK PURCHASES ↓ ↓  
150+ AT 22p EACH  
250+ AT 21p EACH  
350+ AT 20p EACH

**3.5"**  
50 CAPACITY £5.99  
100 CAPACITY £7.99

**5.25"**  
50 CAPACITY £5.49  
100 CAPACITY £7.49



ALL BOXES HAVE A  
SMOKED TOP AND A  
STURDY BASE WITH  
DIVIDERS.

**3.5"** £1.00      **5.25"** £1.00

## PERIPHERALS & SOFTWARE

**C-1010 3.5" DISK DRIVE** £94.99

**C-AMIGA MOUSE** £24.99

**FUTURE SOUND 500** £74.99

**mini GEN** £99.99

**RENDALE 8802 GENLOCK** £269.99

**DIGIEVIEW GOLD** £119.99

**AEGIS ANIMAGIC** £62.99

**AEGIS Sonix** £51.99

**KindWords 2.0** £44.99

**DELUXE PAINT III** £71.99

WE ALSO STOCK A VAST RANGE OF GAMES AND VARIOUS OTHER PROGRAMS FOR ST, AMIGA, ATARI XE AND VCS 2600.

WE ALSO STOCK TOYSTICKS, CABLES, COMPUTERS, DUST COVERS ETC. \*

**BOOKS - PLEASE RING**

**C.S.D.**

**2 WATERLOO RD.**

**CHESTER CH2 2AL**

**SALES: (0244) 312744**

**DESPATCH: (0244) 312675**

**NO PAYMENT WILL BE CASHED UNTIL ORDER IS DESPATCHED. - GUARANTEED!!!**

**PLEASE ADD 75p ON ORDERS UNDER £15**

**ATARI ST**

## 5.25" DISKS

**C** IS A REGISTERED TRADEMARK OF COMMODORE BUSINESS MACHINES

**AMIGA** IS A REGISTERED TRADEMARK OF COMMODORE BUSINESS MACHINES

**AEGIS** IS A REGISTERED TRADEMARK OF AEGIS

**DIGIEVIEW** IS A REGISTERED TRADEMARK OF NEWTEK

**DELUXE PAINT III** IS A REGISTERED TRADEMARK OF ELECTRONIC ARTS

**KINDWORDS** IS A REGISTERED TRADEMARK

**MINIGEN** IS A REGISTERED TRADEMARK

**RENDALE** IS A REGISTERED TRADEMARK

**FUTURE SOUND** IS A REGISTERED TRADEMARK

# PUBLIC DOMAIN NEWS

## New Chiron Conceptions

**Chiron Conceptions** are a great new collection of Public Domain Compilation disks. Each disk is just £4.00 and is packed with programs relating to a specific area of interest. Below is a listing of just some of the disks in the collection. If you would like the full list send an SAE or phone.

### Chiron Conceptions £4.00 each

**CC16:** Ray Tracing - create your very own ray traced pics.

**CC25:** Utilities - some useful utilities for a variety of tasks.

**CC33:** Games & Demos - includes MileStone, Startrek, Zoing! & more.

**CC35:** AmigaBasic Progs - full of Games, Applications & Educational programs.

**CC49:** Sound Digitizer

**CC50:** Animation Demos

**CC51:** NASA Digi Pics - HiRes digitised photos of the Space Shuttle taken at NASA.

### Other Disks at £3.00 each

- ⇒ FISH 1-204
  - ⇒ FAUG 1-75
  - ⇒ PANORAMA 1-72
  - ⇒ SLIPPED DISK 1-40
  - ⇒ AUGE 1-25
  - ⇒ TBAG 1-23
  - ⇒ AMICUS 1-16
- Catalogues available write or phone for details.

### STOP PRESS

for a limited period we are offering one **FREE** disk when you order five:

### THE AMIGA PD LIBRARY

140 Rushdale Road, Sheffield S8 9QE

π (0742) 588429

# AmigaTEX

AmigaTEX provides a powerful alternative in document preparation. It enables you to typeset complex or long documents, especially those of a technical nature such as user manuals or journal papers. It gives you true typeset quality with kerning, ligatures, full floating accents, mathematical and technical symbols and the ability to produce tables and special formats. AmigaTEX will accept input from any text editor or word processor and with its built-in screen previewer, a document formatter of mainframe power becomes available. Also included with AmigaTEX are LaTEX - a document formatter with dozens of preformed styles, Slides - a slide generating macro, and BibTEX - a bibliography database program. AmigaTEX is fully file compatible with other versions of TEX.

Printer drivers are available for most printer types and the complete set of Computer Modern Fonts is included. A companion program METAFONT is available for those who wish to create new fonts or modify existing ones.

AmigaTEX is £125 and printer driver sets (laser series, Epson FX series, NEC P6 and Epson LQ series, HP DeskJet) are priced at £75 each. METAFONT is £50.

All prices include VAT and carriage.

Access and Visa accepted.

For further details and free demo disk write or call:

### THE TEXT FORMATTING COMPANY

14 OSBALDESTON ROAD, LONDON N16 7DP TEL: 01-806 1944

## ADVERTISERS' INDEX

17 Bit Centre.....	88
Amiga PD Library.....	98
Amigatex.....	98
Amiga Users Group .....	76
Amitech Computing .....	96
Applied Research Kernel .....	84
Byteback .....	31
Calco Software.....	27
Castle Software .....	60
Cestrian Software .....	97
Club 68000 .....	42, 43
Computer Shopper Show .....	5
Computerstore .....	97
Database Educational Software .....	47
Dataplex .....	75
Datel Electronics .....	12, 13
Digicom.....	83
Digitia.....	89
Easyprint .....	83
Evesham Micro .....	68
First Micro .....	19
Gainstar.....	80
Gordon Harwood Computers.....	36, 37
Mandarin Software.....	54, 63, 72
Maze Technology .....	76
MD Office Supplies .....	56
Memory Expansion Systems .....	44
Microdeal.....	85
MicroLink .....	90
Midland Microsoft.....	59
MJC Supplies .....	46
Palace Software .....	100
Postronix .....	2, 3
Power Computing.....	25, 27
Purple PD Software .....	75
Shield Computer Services .....	98
Silica Shop .....	99
S K Marketing .....	11
Softsellers.....	41
Sublogic Corporation .....	78
Sunderland Computer Centre .....	62
Trilogic.....	75
Worldwide Software .....	84

## ST & AMIGA REPAIR CENTRE

### £55.00 FIXED PRICE REPAIR

Includes - courier delivery, parts, labour, full service and V.A.T., 90 day warranty, 5 day turnaround  
(subject to parts availability)

All our engineers are fully experienced in 16 bit technology

Estimates given for:

A1000, 2000, Mega ST, Monitors, Printers and customer damaged units

Dealer enquiries welcome

### SHIELD COMPUTER SERVICES LTD

50 Flinton Road, Urmston, Manchester M31 3AB

Tel: 061-747 3185 Fax: 061-747 0515

# FREE! TENSTAR PACK WORTH OVER £229!



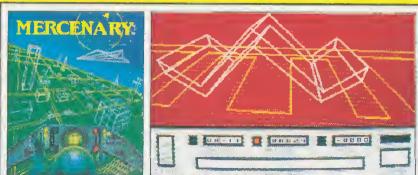
FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal



FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen



FREE! - BARBARIAN, ULT WARRIOR - by Palace



FREE! - TERRORPODS - by Psygnosis



FREE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite



FREE! - IKARI WARRIORS - by Elite



FREE! - WIZBALL - by Ocean

Commodore  
**AMIGA**



**£346.95**  
+VAT =  
**£399**

INCLUDES  
FREE UK  
DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers.

E&OE.

## WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you.

**THE FULL STOCK RANGE:** The largest range of Amiga related peripherals, accessories, books and software in the UK.

**AFTER SALES SUPPORT:** The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

**FREE NEWSLETTERS:** Mailed direct to your home as soon as we print them, featuring offers and latest releases.

**FREE OVERNIGHT DELIVERY:** On all hardware orders shipped to Silica Shop customers within the UK mainland.

**PRICE MATCH PROMISE:** We will normally match our competitors offers on a 'same product same price' basis.

**FREE TECHNICAL HELPLINE:** Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

## PHOTON PAINT PACK

A500 Computer £399.99

TV Modulator £24.99

Photon Paint £69.95

TenStar Pack £229.50

**TOTAL RRP: £724.43**

**LESS DISCOUNT: £325.43**

**PACK PRICE INC VAT: £399**

## 1084S MONITOR PACK

A500 Computer £399.99

1084S Colour Monitor £299.99

Photon Paint £69.95

TenStar Pack £229.50

**TOTAL RRP: £999.43**

**LESS DISCOUNT: £350.43**

**PACK PRICE INC VAT: £649**

## FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500-A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

## FREE TENSTAR PACK

Amegas	£14.95
Art Of Chess	£24.95
Barbarian, Ult Warrior	£19.95
Buggy Boy	£24.95
Ikari Warriors	£24.95
Insanity Fight	£24.95
Mercenary Comp	£19.95
Terrorpods	£24.95
Thundercats	£24.95
Wizball	£24.95
<b>TOTAL RRP: £229.50</b>	<b>INC VAT</b>

## DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

### SILICA SHOP:

**SIDCUP ( & Mail Order )**      **01-309 1111**  
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX  
OPEN: MON-SAT 9am - 5.30pm      LATE NIGHT: FRIDAY 9am - 7pm

**LONDON**      **01-580 4000**  
52 Tottenham Court Road, London, W1P 0BA  
OPEN: MON-SAT 9.30am - 6.00pm      LATE NIGHT: NONE

**LONDON**      **01-629 1234 ext. 3914**  
Selfridges (1st floor), Oxford Street, London, W1A 1AB  
OPEN: MON-SAT 9am - 6.00pm      LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd, Dept AMCOM 08/89, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX  
**PLEASE SEND ME FREE LITERATURE ON THE AMIGA**

Mr/Mrs/Ms: \_\_\_\_\_ Initials: \_\_\_\_\_ Surname: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Postcode: \_\_\_\_\_

Do you already own a computer?  
If so, which one do you own?

# CastleWarrior



Your King  
has been Poisoned !  
You have one day  
to find the Antidote.

FOR ATARI ST AND AMIGA



PALACE SOFTWARE

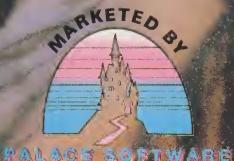


# Warrior



Your King  
has been Poisoned !  
You have one day  
to find the Antidote.

FOR ATARI ST AND AMIGA



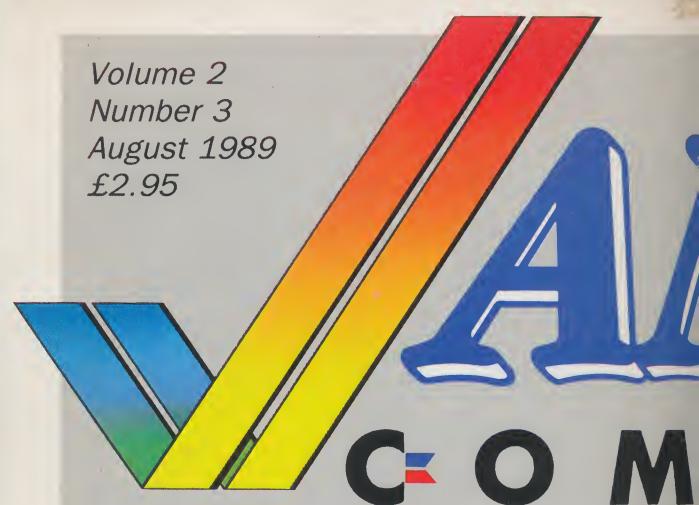
**DELPHINE**  
SOFTWARE

AMIGA COMPUTING

August 1989

Vol. 2 No. 3

Volume 2  
Number 3  
August 1989  
£2.95



**WIN!** 6 hard discs  
worth £3,500



**POT** Exclusive review  
of 3D Pool!

**THIS IS IT!**  
The disc you've all  
been waiting for

August 1989

**AMIGA**  
COMPUTING

A MEGABYTE OF SUPER SOFTWARE

GREAT DEMOS!

- Trained Assassin: Have you the skill to survive the test?
- Raider: Can you defy gravity in your wandering spaceship?

GREAT UTILITIES!

- Model Universe: Create your very own solar system.
- DiskChecker/DiskSalv: No more corrupt disc problems.

To load: Switch on and insert disc

Full instructions are in the August issue of *Amiga Computing*